

# DIFFERENTIALS

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1. General Description
2. Differential Gear Oil
3. Rear Differential
4. Rear Differential Carrier Oil Seal
5. Rear Differential Side Gear Shaft Oil Seal
6. Rear Differential Mount Bushing
7. Symptoms and causes

## DIFFERENTIALS > General Description

### CAUTION

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- When performing service operation, refer to "Repair Contents" in "General Description".  [Ref. to REPAIR CONTENTS>Repair Contents.](#)
- Prior to starting work, pay special attention to the following:
  1. Always wear work clothes, a work cap, and protective shoes. Additionally, wear a helmet, protective goggles, etc. if necessary.
  2. Protect the vehicle using a seat cover, fender cover, etc.
  3. Prepare the service tools, clean cloth, containers to catch grease and oil, etc.
- Prevent scattering of grease and oil. If it scatters, wipe it off immediately to prevent it from penetrating the floor or flowing out, to protect the environmental.
- If the grease and oil is spilt over the engine, exhaust pipe or the under cover, completely wipe it off to avoid emission of smoke or causing a fire.
- Vehicle components are extremely hot immediately after driving. Be wary of receiving burns from heated parts.
- When performing a repair, identify the cause of trouble and avoid unnecessary work.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground terminal from the battery sensor.
- Always use the jack-up point when the lifting device, shop jacks or rigid racks are used to support the vehicle.
- Before starting works, remove dirt and corrosion around the target area.
- Keep the removed parts in order and protect them from dust and dirt.
- All removed parts, if to be reused, should be reinstalled in the original positions with attention to the correct directions, etc.
- For the parts except for the non-reusable parts, replace them with new parts if necessary.
- Be sure to tighten bolts and nuts to the specified torque.
- Always use new application oil during work.

**DIFFERENTIALS > General Description****SPECIFICATION****1. REAR DIFFERENTIAL**

LSD type	Torsen LSD	
Type of gear	Hypoid gear	
Gear ratio	AT model	3.909
	MT model	4.100
Drive pinion bearing preload	 Ref. to DIFFERENTIALS>Rear Differential>ASSEMBLY.	
Final gear set backlash	mm (in)	0.11 – 0.22 (0.004 – 0.009)
Companion flange mating surface runout	mm (in)	0.09 (0.004)
Companion flange runout on its inner side	mm (in)	0.09 (0.004)

**2. DIFFERENTIAL GEAR OIL****Caution:**

**Do not mix different kinds of oil.**

**Note:**

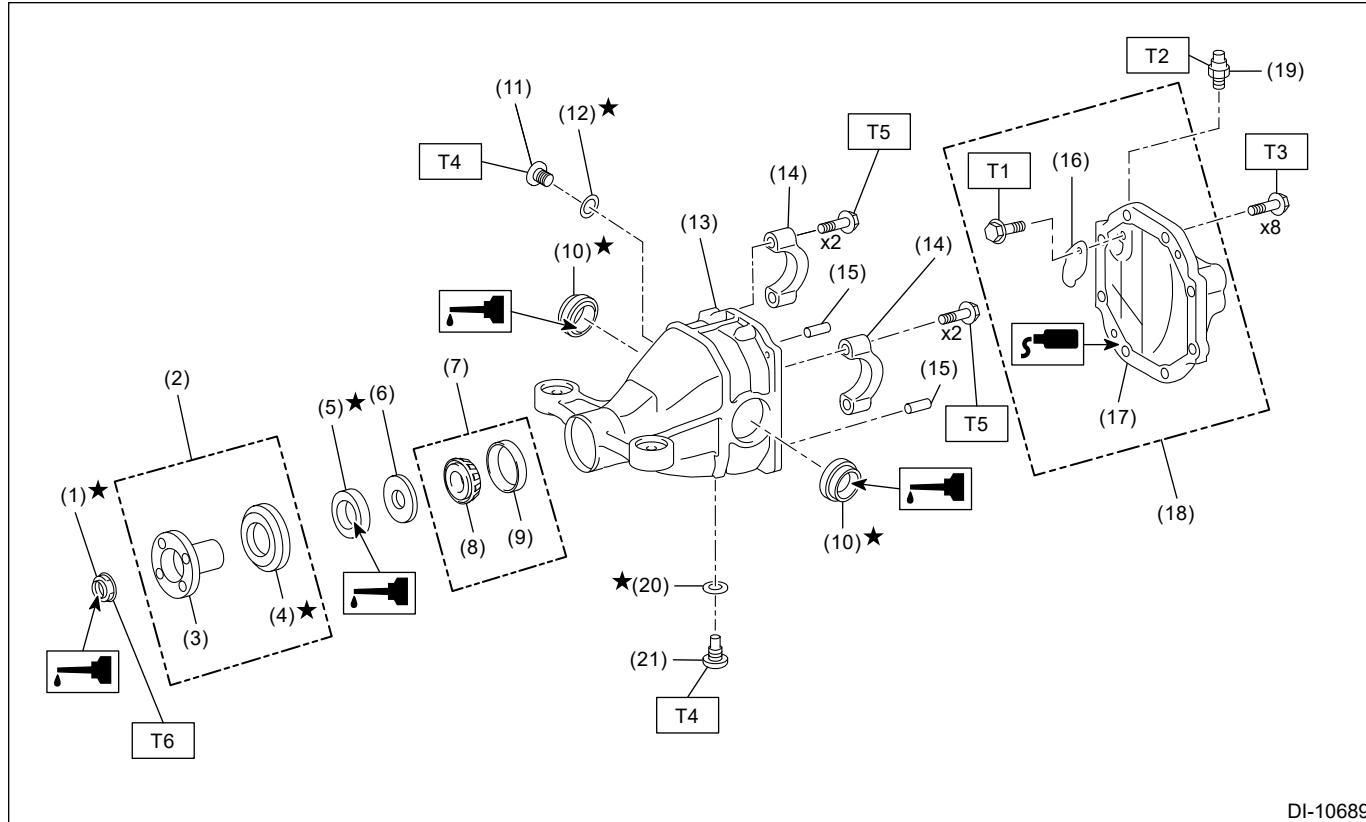
**Using any materials other than recommended may result in abnormal noise, vibration, functional decline, or poor fuel economy.**

Recommended and alternative materials	Capacity
<ul style="list-style-type: none"> <li><b>Recommended materials:</b> Differential gear oil LX</li> <li><b>Alternative:</b> API standard GL-5 (75W-85 or 75W-90)</li> </ul>	1.15 (1.22, 1.01)

## DIFFERENTIALS > General Description

### COMPONENT

#### 1. REAR DIFFERENTIAL

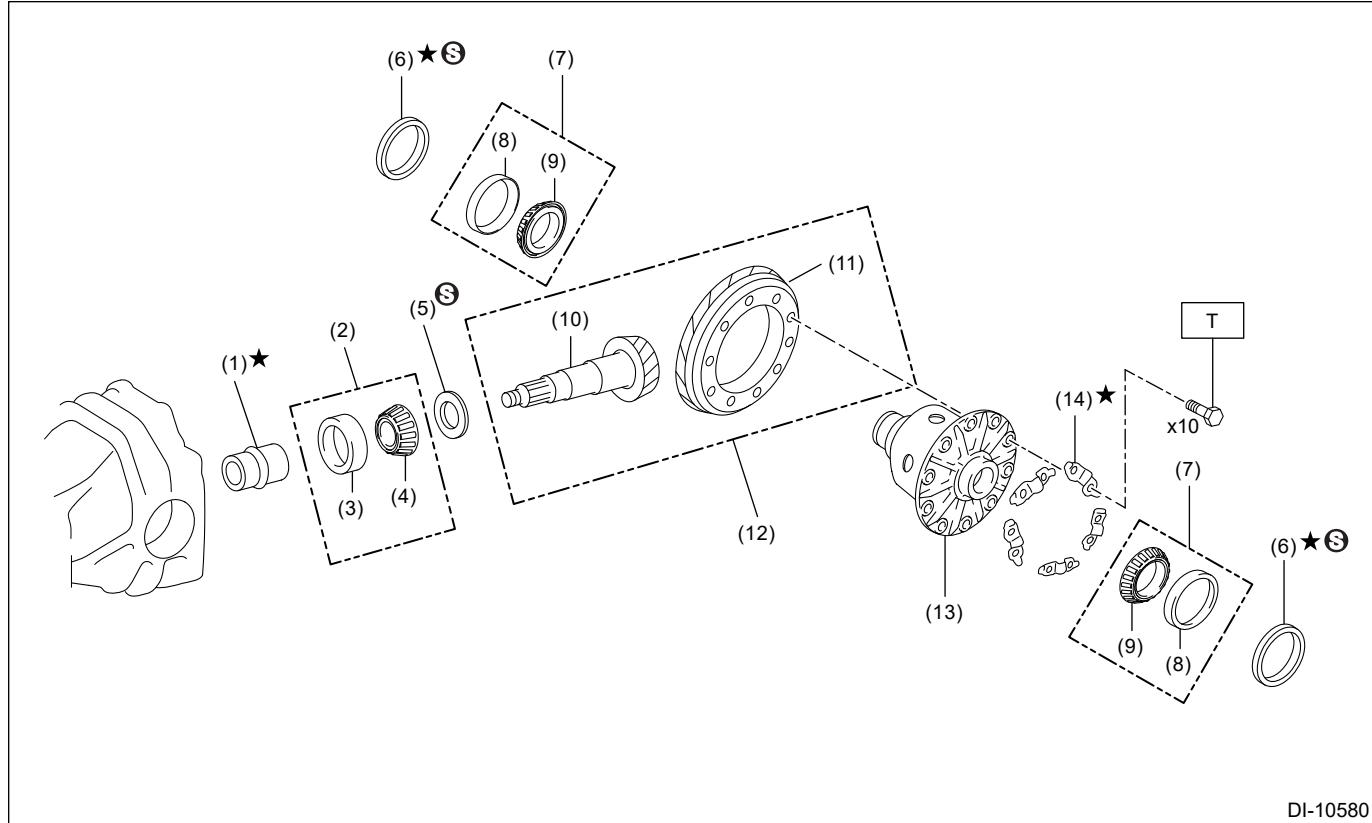


DI-10689

- |   |   |  |
|---|---|--|
| (1) Drive pinion nut                                    | (11) Filler plug                          | (21) Drain plug  |
| (2) Companion flange set                                | (12) Gasket                               |  |
| (3) Companion flange                                    | (13) Differential carrier*                |  |
| (4) Rear differential dust deflector                    | (14) Bearing cap*                         | <b>Tightening torque: N·m (kgf·m, ft-lb)</b>                       |
| (5) Rear differential carrier oil seal                  | (15) Straight pin                         | <b>T1: 8 (0.8, 5.9)</b>  |
| (6) Drive pinion oil slinger                            | (16) Breather plug oil deflector          | <b>T2: 21 (2.1, 15.5)</b>  |
| (7) Drive pinion tapered roller bearing FR              | (17) Differential carrier cover           | <b>T3: 47 (4.8, 34.7)</b>  |
| (8) Drive pinion tapered roller bearing FR (inner race) | (18) Rear differential carrier cover ASSY | <b>T4: 49 (5.0, 36.1)</b>  |
| (9) Drive pinion tapered roller bearing FR (outer race) | (19) Rear differential breather plug      | <b>T5: 85 (8.7, 62.7)</b>  |
| (10) Rear differential side gear shaft oil seal         | (20) Gasket                               | <b>T6: Ref. to DIFFERENTIALS&gt;Rear Differential&gt;ASSEMBLY.</b> |

\*: The differential carrier and the bearing cap are set parts.

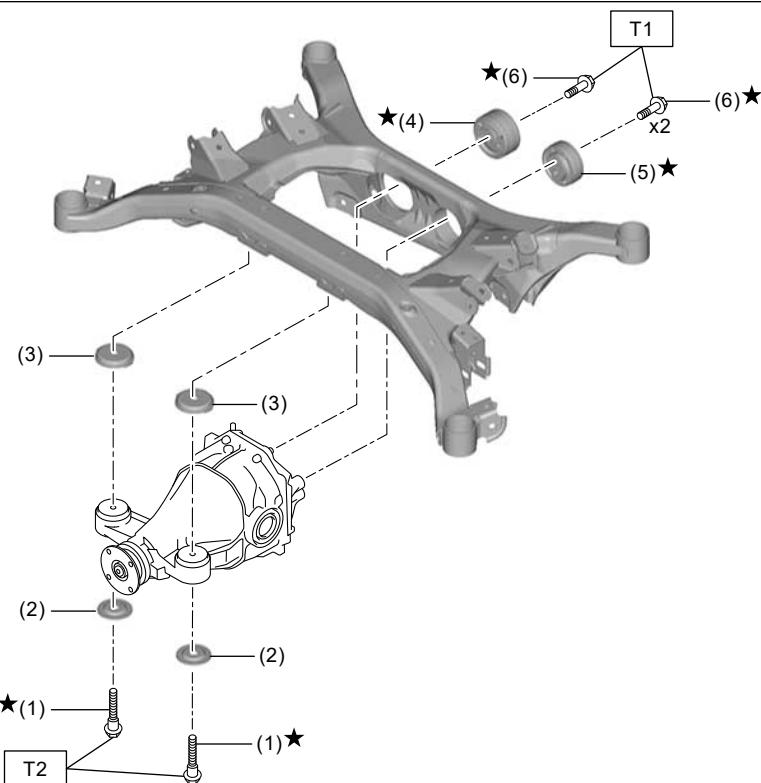
## 2. REAR DIFFERENTIAL SYSTEM



DI-10580

(1) Drive pinion bearing spacer	(8) Case bearing (outer race)	<b>Tightening torque: N·m (kgf-m, ft-lb)</b>
(2) Drive pinion tapered roller bearing RR	(9) Case bearing (inner race)	<b>T: 97 (9.9, 71.5)</b>
(3) Drive pinion tapered roller bearing RR (outer race)	(10) Drive pinion	
(4) Drive pinion tapered roller bearing RR (inner race)	(11) Ring gear	
(5) Drive pinion washer	(12) Final gear set	
(6) Side gear shaft washer	(13) Differential case	
(7) Case bearing	(14) Lock plate	

### 3. REAR DIFFERENTIAL MOUNTING SYSTEM



DI-10581

(1) Bolt	(4) Rear differential mount bushing RH	<b>Tightening torque: N·m (kgf-m, ft-lb)</b>
(2) Rear differential mount stopper LWR	(5) Rear differential mount bushing LH	<b>T1: 62 (6.3, 45.7)</b>
(3) Rear differential mount stopper UPR	(6) Bolt	<b>T2:</b> <a href="#"><u>Ref. to DIFFERENTIALS&gt;Rear Differential&gt;INSTALLATION N.</u></a>

## DIFFERENTIALS &gt; General Description

## PREPARATION TOOL

## 1. SPECIAL TOOL

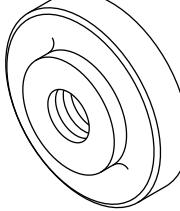
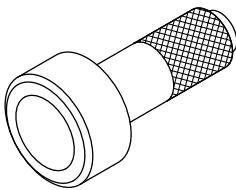
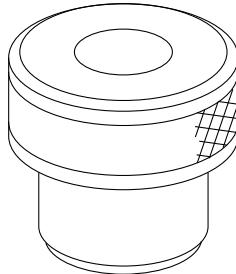
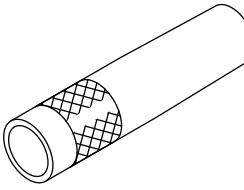
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-398477702	398477702	DRIFT	<p>Used for installing the case bearing (inner race).</p> <p><b>Note:</b> <b>Used together with BASE (09710-04081).</b></p>
 ST-498447120	498447120	INSTALLER	<p>Used for installing the rear differential carrier oil seal.</p> <p><b>Note:</b> <b>Used together with PRESS SNAP RING (499755502).</b></p>
 ST-499225500	499225500	GAUGE	<p>Used for installing the rear differential dust deflector.</p> <p><b>Note:</b> <b>Used together with INSTALLER (499277200).</b></p>
 ST-499277200	499277200	INSTALLER	<p>Used for installing the rear differential dust deflector.</p> <p><b>Note:</b> <b>Used together with GAUGE (499225500).</b></p>

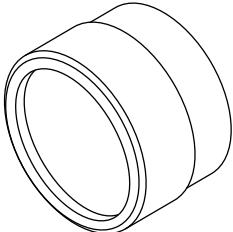
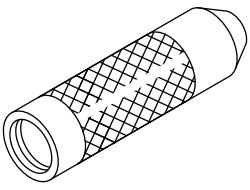
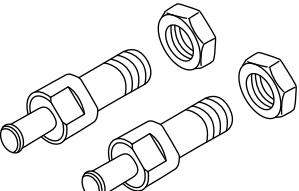
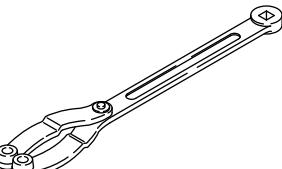
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499755502	499755502	PRESS SNAP RING	Used for installing the rear differential carrier oil seal.  <b>Note:</b> <b>Used together with INSTALLER (498447120).</b>
 ST-499877000	499877000	RACE 4-5 INSTALLER	Used for removing the rear differential dust deflector.  <b>Note:</b> <b>Used together with BEARING REMOVER (09950-00020).</b>
 ST18334AA030	18334AA030	PULLEY WRENCH PIN SET	Used for removing and installing the drive pinion nut.  <b>Note:</b> <b>Used together with PULLEY WRENCH (18355AA000).</b>
 ST18355AA000	18355AA000	PULLEY WRENCH	Used for removing and installing the drive pinion nut.  <b>Note:</b> <b>Used together with PULLEY WRENCH PIN SET (18334AA030).</b>

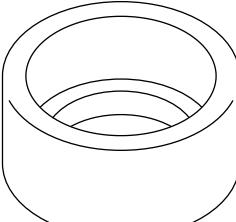
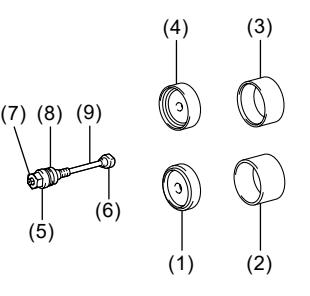
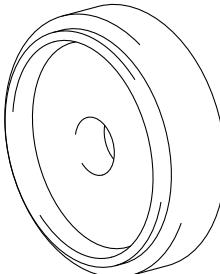
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST20299AG010	20299AG010	BASE	Used for installing rear differential side gear shaft oil seal.
 ST41399CA000	41399CA000	SPECIAL TOOL ASSY	<ul style="list-style-type: none"> <li>Used for removing and installing the rear differential mount bushing RH.</li> </ul> <p><b>Caution:</b> <b>Apply the molybdenum grease on the threads.</b></p> <ul style="list-style-type: none"> <li>Use (1), (2), (5), (6), (7), (8), and (9) as well as (1), (2), (3), (5), (6), (7), (8), and (9) for removal.</li> <li>Use (3), (4), (5), (6), (7), (8) and (9) for installation.</li> </ul> <p>(1) SPECIAL TOOL A (41399CA010)  (2) SPECIAL TOOL B (41399CA020)  (3) SPECIAL TOOL C (41399CA030)  (4) SPECIAL TOOL D (41399CA040)  (5) SPECIAL TOOL SLEEVE (41399FG050)  (6) SPECIAL TOOL RING (41399FG061)  (7) SPECIAL TOOL NUT (41399FG070)  (8) SPECIAL TOOL BEARING (41399FG080)  (9) SPECIAL TOOL SHAFT (41399FG091)</p>
 ST41399CA010	41399CA010	SPECIAL TOOL A	<p>Used for removing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>

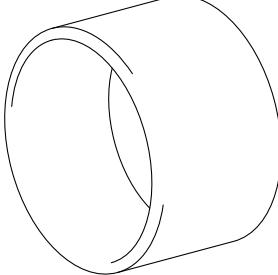
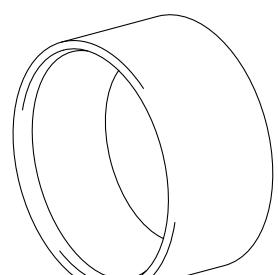
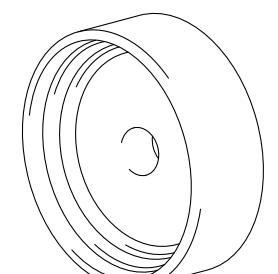
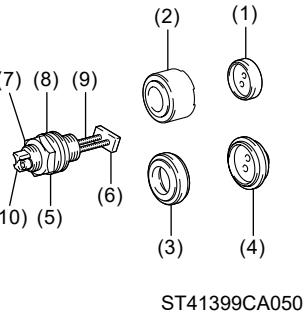
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST41399CA020	41399CA020	SPECIAL TOOL B	<p>Used for removing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>
 ST41399CA030	41399CA030	SPECIAL TOOL C	<p>Used for removing and installing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>
 ST41399CA040	41399CA040	SPECIAL TOOL D	<p>Used for installing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>
 ST41399CA050	41399CA050	SPECIAL TOOL ASSY	<ul style="list-style-type: none"> <li>Used for removing and installing the rear differential mount bushing LH.</li> </ul> <p><b>Caution:</b> <b>Apply the molybdenum grease on the threads.</b></p> <ul style="list-style-type: none"> <li>Use (1), (2), (5), (6), (7), (8), (9) and (10) for removal.</li> <li>Use (3), (4), (5), (6), (7), (8), (9) and (10) for installation.</li> </ul> <p>(1) SPECIAL TOOL A (41399CA060)    (2) SPECIAL TOOL B (41399CA070)    (3) SPECIAL TOOL C (41399CA080)    (4) SPECIAL TOOL D (41399CA090)    (5) SPECIAL TOOL SLEEVE (41399CA100)</p>

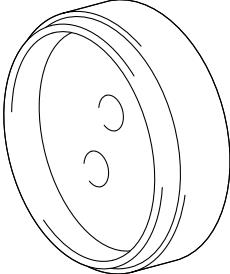
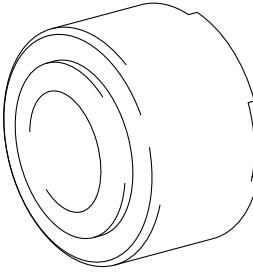
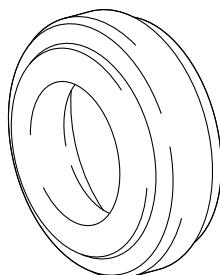
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
			(6) SPECIAL TOOL PLATE (41399CA110) (7) SPECIAL TOOL NUT (41399CA120) (8) SPECIAL TOOL BEARING (41399CA130) (9) SPECIAL TOOL BOLT (41399CA140) (10) SPECIAL TOOL SHAFT (41399CA150)
 ST41399CA060	41399CA060	SPECIAL TOOL A	Used for removing the rear differential mount bushing LH. <b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b>
 ST41399CA070	41399CA070	SPECIAL TOOL B	Used for removing the rear differential mount bushing LH. <b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b>
 ST41399CA080	41399CA080	SPECIAL TOOL C	Used for installing the rear differential mount bushing LH. <b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b>

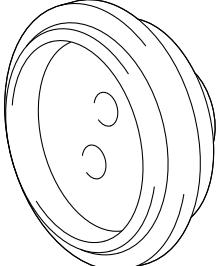
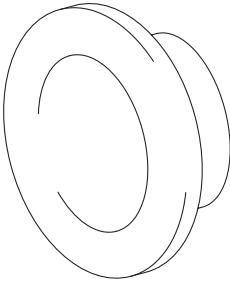
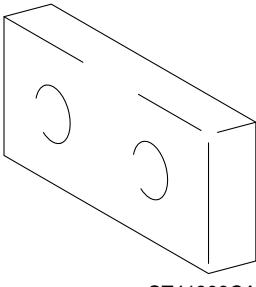
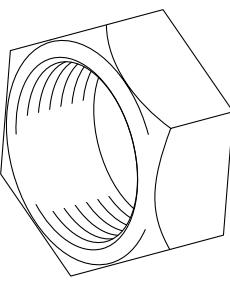
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST41399CA090	41399CA090	SPECIAL TOOL D	<p>Used for installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>
 ST41399CA100	41399CA100	SPECIAL TOOL SLEEVE	<p>Used for removing and installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>
 ST41399CA110	41399CA110	SPECIAL TOOL PLATE	<p>Used for removing and installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>
 ST41399CA120	41399CA120	SPECIAL TOOL NUT	<p>Used for removing and installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>

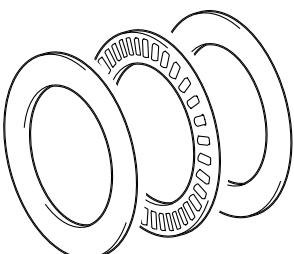
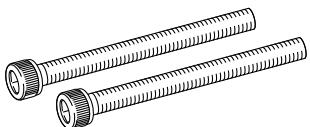
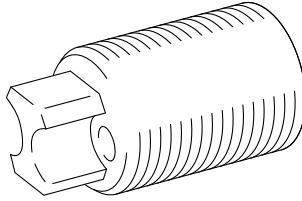
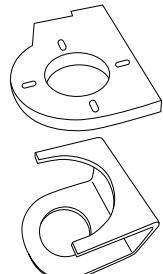
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 ST41399CA130	41399CA130	SPECIAL TOOL BEARING	<p>Used for removing and installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>
 ST41399CA140	41399CA140	SPECIAL TOOL BOLT	<p>Used for removing and installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>
 ST41399CA150	41399CA150	SPECIAL TOOL SHAFT	<p>Used for removing and installing the rear differential mount bushing LH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA050)".</b></p>
 ST41399CA170	41399CA170	SPECIAL TOOL ASSY	Used for installing the rear differential.

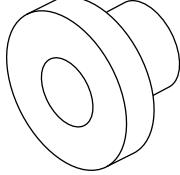
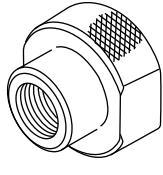
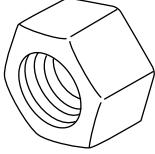
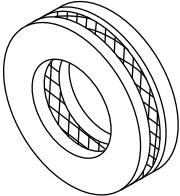
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	41399FG050 ST41399FG050	SPECIAL TOOL SLEEVE	<p>Used for removing and installing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>
	41399FG061 ST41399FG061	SPECIAL TOOL RING	<p>Used for removing and installing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>
	41399FG070 ST41399FG070	SPECIAL TOOL NUT	<p>Used for removing and installing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>
	41399FG080 ST41399FG080	SPECIAL TOOL BEARING	<p>Used for removing and installing the rear differential mount bushing RH.</p> <p><b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b></p>

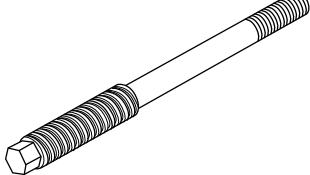
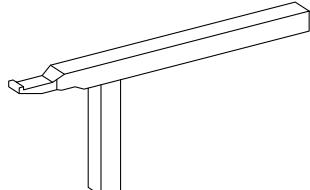
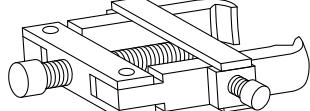
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	41399FG091 ST41399FG091	SPECIAL TOOL SHAFT	Used for removing and installing the rear differential mount bushing RH.  <b>Note:</b> <b>For combination of tools, refer to "SPECIAL TOOL ASSY (41399CA000)".</b>
	09504-22012 ST0950422012	DIFFERENTIAL SIDE WASHER REMOVER AND REPLACER	Used for removing and installing the side gear shaft washer.
	09506-30012 ST0950630012	DIFFERENTIAL DRIVE PINION REAR BEARING CONE REPLACER	Used for installing the drive pinion tapered roller bearing RR (inner race).
	09556-22010 ST0955622010	DRIVE PINION FRONT BEARING REMOVER	Used for removing the drive pinion tapered roller bearing FR (inner race).  <b>Caution:</b> <b>Apply the molybdenum grease on the threads.</b>

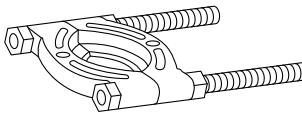
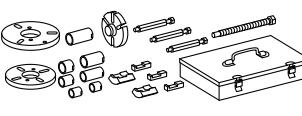
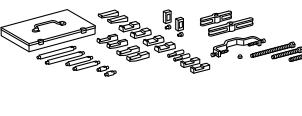
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	09710-30012	REAR SUSPENSION BUSHING TOOL SET	<p>Used for installing the case bearing (inner race).</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• <b>BASE (09710-04081) is used.</b></li> <li>• <b>Used together with DRIFT (398477702).</b></li> </ul>
	09950-00020	BEARING REMOVER	<ul style="list-style-type: none"> <li>• Used for removing the rear differential dust deflector.</li> </ul> <p><b>Note:</b></p> <p><b>Used together with RACE 4-5 INSTALLER (499877000).</b></p> <ul style="list-style-type: none"> <li>• Used for removing the drive pinion tapered roller bearing RR (inner race).</li> </ul>
	09950-30012	PULLER A SET	<p>Used for removing and installing the companion flange.</p> <p><b>Caution:</b></p> <p><b>Apply the molybdenum grease on the threads.</b></p> <p><b>Note:</b></p> <p><b>UPPER PLATE (09951-03010), CENTER BOLT (09953-03010), ARM (09954-03010), LOWER PLATE 130 (09955-03030), and ADAPTER 20 (09956-03030) are used.</b></p>
	09950-40011	PULLER B SET	<p>Used for removing the case bearing (inner race).</p> <p><b>Caution:</b></p> <p><b>Apply the molybdenum grease on the threads.</b></p>

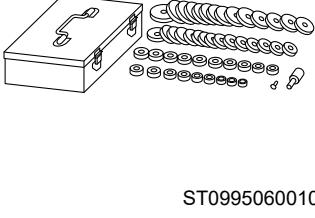
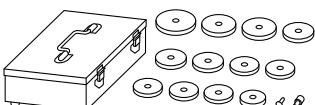
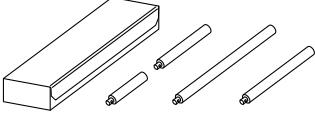
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
			<p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• <b>HANGER 200 (09951-04020), SLIDE ARM (09952-04010), CENTER BOLT 200 (09953-04030), ARM 25 (09954-04010), CLAW NO. 6 (09955-04061), ATTACHMENT (09957-04010) and HOLDER (09958-04011)</b> are used.</li> <li>• Used together with REPLACER 35 (09951-00350), REPLACER 48 (09951-00480) and ADAPTER (09952-06010).</li> </ul>
 ST0995060010	09950-60010	REPLACER SET	<p>Used for removing the case bearing (inner race).</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• <b>REPLACER 35 (09951-00350), REPLACER 48 (09951-00480) and ADAPTER (09952-06010)</b> are used.</li> <li>• Used together with HANGER 200 (09951-04020), SLIDE ARM (09952-04010), CENTER BOLT 200 (09953-04030), ARM 25 (09954-04010), CLAW NO. 6 (09955-04061), ATTACHMENT (09957-04010) and HOLDER (09958-04011).</li> </ul>
 ST0995060020	09950-60020	REPLACER SET No. 2	<ul style="list-style-type: none"> <li>• Used for installing the drive pinion tapered roller bearing FR (outer race).</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• <b>REPLACER 72 (09951-00720) is used.</b></li> <li>• Used together with HANDLE 100 (09951-07100).</li> </ul> <ul style="list-style-type: none"> <li>• Used for installing the drive pinion tapered roller bearing RR (outer race).</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• <b>REPLACER 89 (09951-00890) is used.</b></li> <li>• Used together with HANDLE 200 (09951-07200).</li> </ul>

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST0995070010	09950-70010	HANDLE SET	<ul style="list-style-type: none"> <li>Used for installing the drive pinion tapered roller bearing FR (outer race).</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li><b>HANDLE 100 (09951-07100) is used.</b></li> <li><b>Used together with REPLACER 72 (09951-00720).</b></li> </ul> <ul style="list-style-type: none"> <li>Used for installing the drive pinion tapered roller bearing RR (outer race).</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li><b>HANDLE 200 (09951-07200) is used.</b></li> <li><b>Used together with REPLACER 89 (09951-00890).</b></li> </ul>
 STSSM4	—	SUBARU SELECT MONITOR 4	<p>Used for setting of each function and troubleshooting for electrical system.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li><b>For detailed operation procedures, refer to "Help" of application.</b></li> <li><b>Used together with interface for Subaru Select Monitor (such as DST-i and DST-010).</b></li> </ul>

## 2. GENERAL TOOL

TOOL NAME	REMARKS
Micrometer	Used for measuring the side gear shaft washer.
Crowbar	Used for removing the rear drive shaft.
Dial gauge	<ul style="list-style-type: none"> <li>Used for measuring backlash. (Spindle type)</li> </ul> <p><b>Note:</b> <b>Used together with magnet stand.</b></p> <ul style="list-style-type: none"> <li>Used for measuring the companion flange runout. (Lever type)</li> </ul> <p><b>Note:</b> <b>Used together with magnet stand.</b></p>
Magnet stand	<ul style="list-style-type: none"> <li>Used for measuring backlash.</li> </ul> <p><b>Note:</b> <b>Used together with the dial gauge (spindle type).</b></p> <ul style="list-style-type: none"> <li>Used for measuring the companion flange runout.</li> </ul> <p><b>Note:</b> <b>Used together with the dial gauge (lever type).</b></p>
Transmission jack	Used for removing and installing the rear differential.
Engine stand	Used for disassembly and assembly of the rear differential.

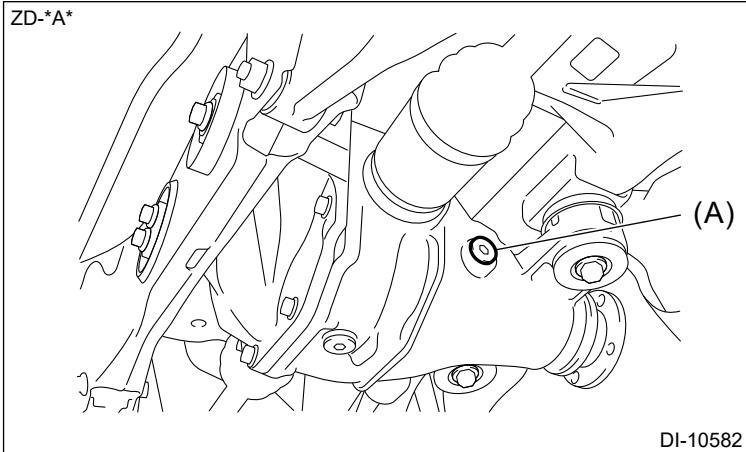
## DIFFERENTIALS > Differential Gear Oil

### INSPECTION

**Caution:**

If the differential gear oil is spilt over exhaust pipe, etc., wipe it off to avoid emitting smoke or causing a fire.

1. Remove the filler plug (A).



2. Check the differential gear oil.

Replace the differential gear oil if it is degraded, clouded or contaminated.  [Ref. to DIFFERENTIALS>Differential Gear Oil>REPLACEMENT.](#)

3. Check that the differential gear oil level is within –5 mm (–0.2 in) from the bottom of the filler plug hole.

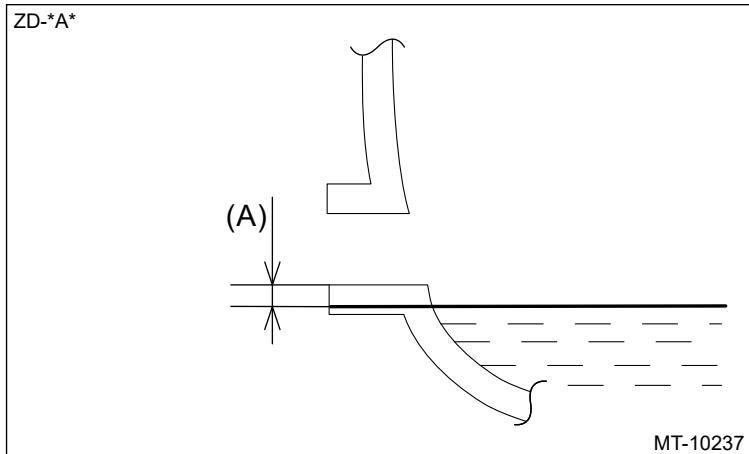
If the differential gear oil level is low, make sure that there is no oil leakage and refill up to the bottom of filler plug hole.

**Note:**

- Excessive or insufficient differential gear oil level causes failures.
- Perform inspection with the vehicle being level.
- Fill the differential gear oil until it flow out of the filler plug hole and wait the outflow to stop.

**Preparation items:**

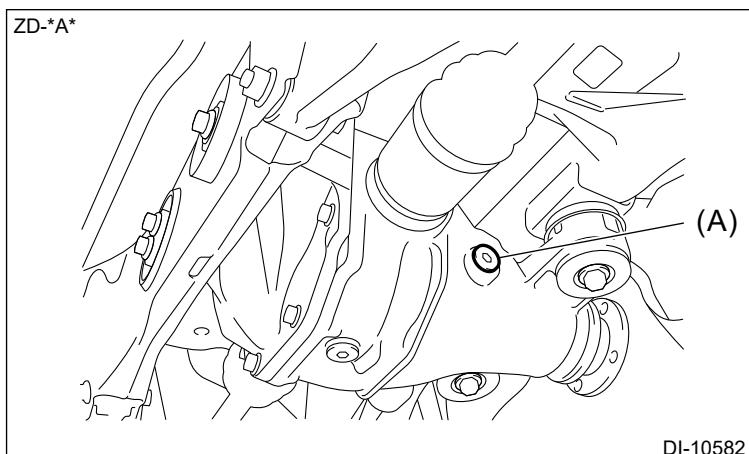
Differential gear oil:  [Ref. to DIFFERENTIALS>General Description>SPECIFICATION > DIFFERENTIAL GEAR OIL.](#)



4. Using a new gasket, install the filler plug (A).

**Tightening torque:**

49 N·m (5.0 kgf-m, 36.1 ft-lb)



## DIFFERENTIALS > Differential Gear Oil

### REPLACEMENT

**Caution:**

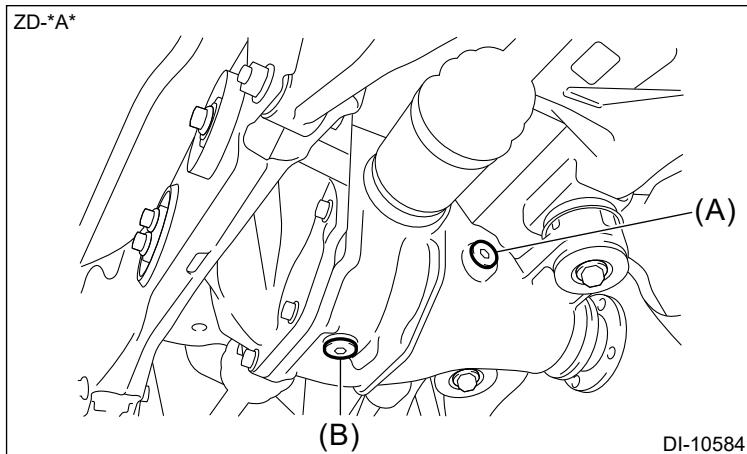
If the differential gear oil is spilt over exhaust pipe, etc., wipe it off to avoid emitting smoke or causing a fire.

**Note:**

When the differential gear oil was replaced, check the differential gear oil level after driving.

 [Ref. to DIFFERENTIALS>Differential Gear Oil>INSPECTION.](#)

1. Remove the filler plug (A).
2. Remove the drain plug (B), and drain differential gear oil.



3. Remove the iron powder, etc. from the drain plug.
4. Install the drain plug using a new gasket.

**Tightening torque:**

49 N·m (5.0 kgf-m, 36.1 ft-lb)

5. Fill the differential gear oil to the bottom of filler plug hole.

**Note:**

Fill the differential gear oil until it flow out of the filler plug hole and wait the outflow to stop.

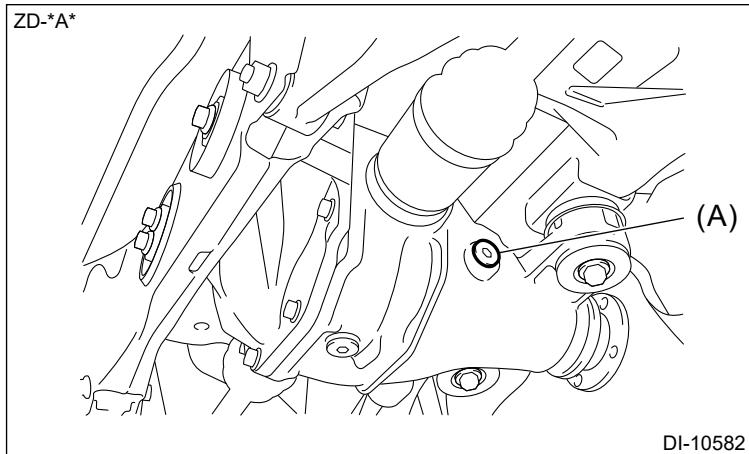
**Preparation items:**

Differential gear oil:  [Ref. to DIFFERENTIALS>General Description>SPECIFICATION > DIFFERENTIAL GEAR OIL.](#)

6. Using a new gasket, install the filler plug (A).

**Tightening torque:**

49 N·m (5.0 kgf-m, 36.1 ft-lb)



## DIFFERENTIALS > Rear Differential

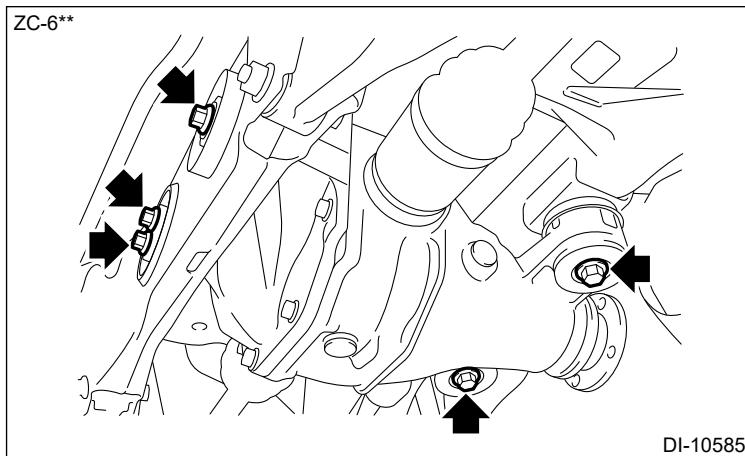
### REMOVAL



1. Release the parking brake.
2. Release the shift lock and shift the select lever to the "N range". (AT model) [Ref. to CONTROL SYSTEMS>Select Lever>REMOVAL.](#)
3. Drain differential gear oil. [Ref. to DIFFERENTIALS>Differential Gear Oil>REPLACEMENT.](#)
4. Remove the propeller shaft. [Ref. to PROPELLER SHAFT / DRIVE SHAFT / AXLE>Propeller Shaft>REMOVAL.](#)
5. Remove the stabilizer rear. [Ref. to REAR SUSPENSION>Stabilizer>REMOVAL.](#)
6. Loosen the bolts securing the rear differential.

**Caution:**

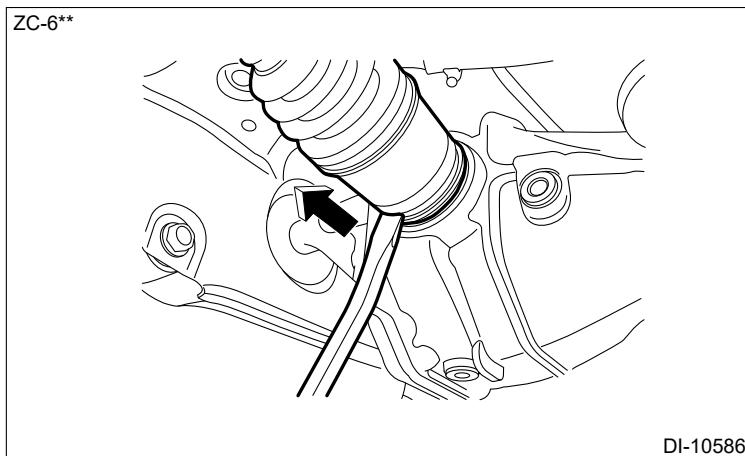
**Do not over-loosen the bolt because the rear differential may fall off.**



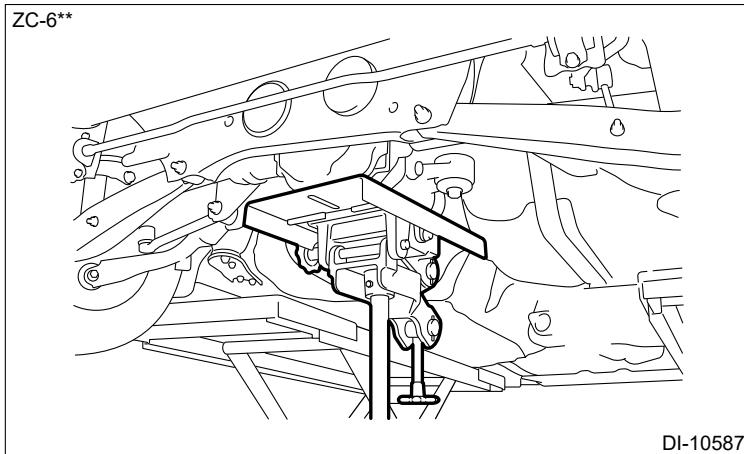
7. Using a crowbar, etc., disengage the rear drive shaft (RH) and rear drive shaft (LH).

**Caution:**

**Set a crowbar, etc. against the differential carrier.**



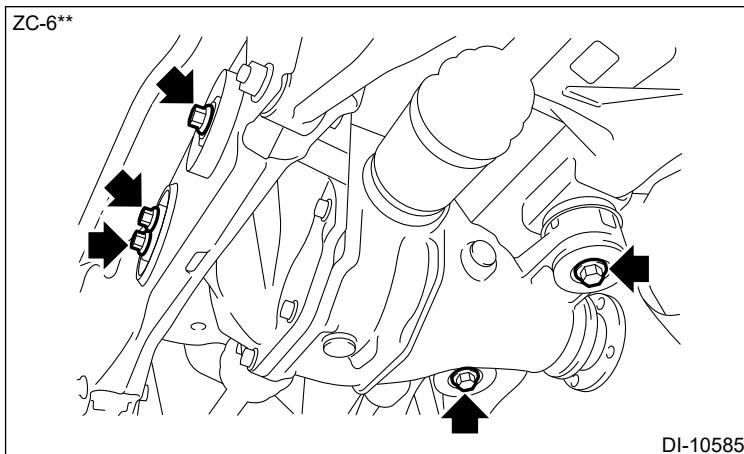
8. Set the transmission jack.



- 9.** Remove the bolts securing the rear differential, and then remove the rear differential mount stopper UPR and the rear differential mount stopper LWR.

**Note:**

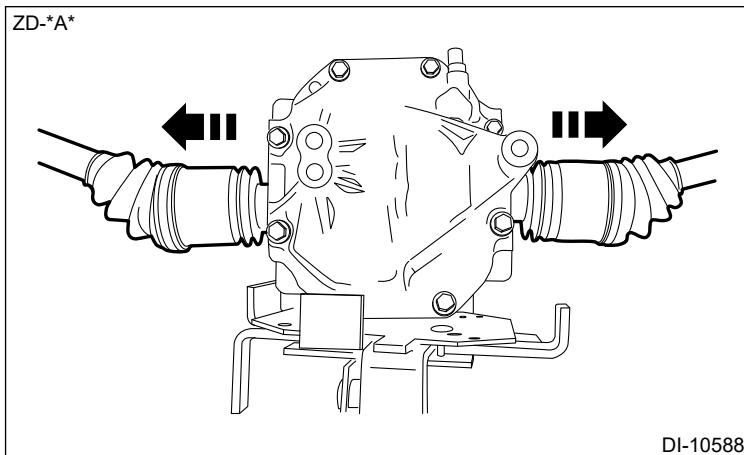
**Adjust the position and angle of the transmission jack if necessary.**



- 10.** Lower the transmission jack, pull out the rear drive shaft and remove the rear differential.

**Caution:**

**If the circlip remains inside the rear differential, overhaul the differential carrier.**   
[Ref. to DIFFERENTIALS>Rear Differential>DISASSEMBLY.](#)



- 11.** Hang the rear drive shaft with a string, etc.

**Note:**

**This is necessary to prevent damage of the rear drive shaft.**

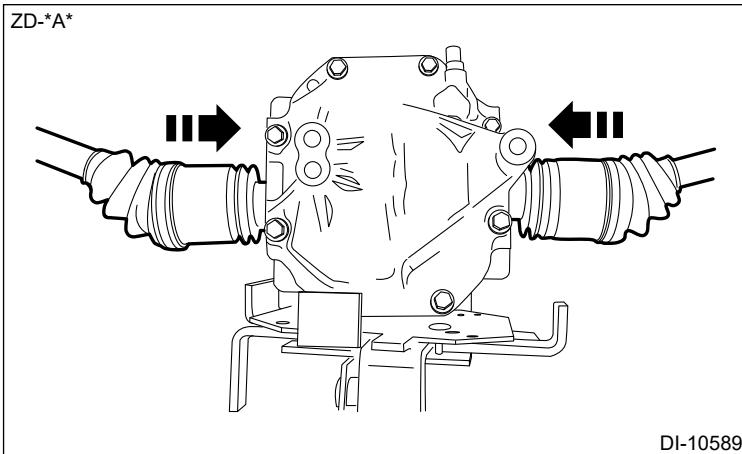
## DIFFERENTIALS > Rear Differential

### INSTALLATION

1. Replace the rear differential side gear shaft oil seal with a new part.  Ref. to DIFFERENTIALS>Rear Differential Side Gear Shaft Oil Seal>REPLACEMENT.
2. Set the rear differential to transmission jack.
3. Apply differential gear oil to the rear differential side gear shaft oil seal lip and rear drive shaft insertion section.
4. Insert the rear drive shaft.

**Caution:**

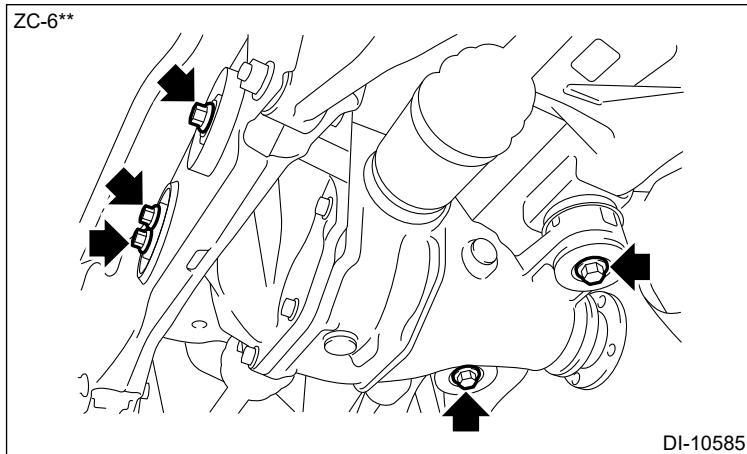
- Always replace the circlip with a new part.
- Place the circlip with its cut end facing downward.
- Be careful not to damage the oil seal.
- Do not strike the tip of the outboard joint with a hammer.
- If there is a malfunction, such as dislocation, etc., in the inboard joint, replace the drive shaft with a new part.



5. Temporarily install the rear differential.
  - (1) Set the rear differential mount stopper UPR and the rear differential mount stopper LWR on the rear differential.
  - (2) Temporarily install the rear differential.

**Caution:**

Always use a new bolt.



**6.** Tighten the bolts which hold the rear differential.

- (1) Remove the transmission jack.

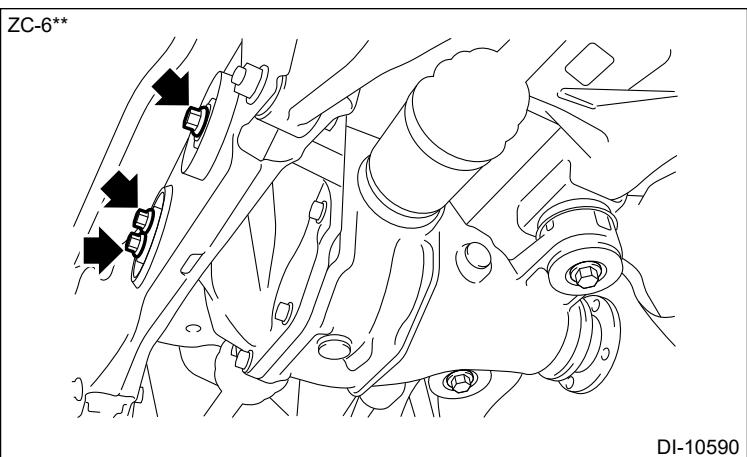
**Caution:**

**Be sure to detach the transmission jack, and tighten the bolt with the rear differential seated under its own weight.**

- (2) Tighten the flange bolt shown in the figure.

**Tightening torque:**

62 N·m (6.3 kgf-m, 45.7 ft-lb)

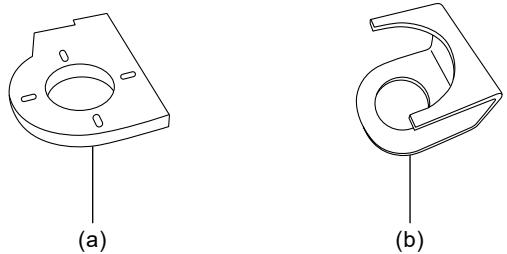


- (3) Set the ST and the rear differential mount stopper LWR (A).

**Note:**

- ST consists of (a) and (b).
- Stack the rear differential mount stopper LWR (A) and (a) and then secure them with (b).

ZD-\*A\*



DI-10652

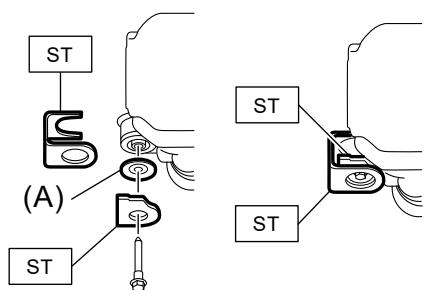
(a) Plate

(b) Holder

**Preparation tool:**

ST: SPECIAL TOOL ASSY (41399CA170)

ZD-\*A\*

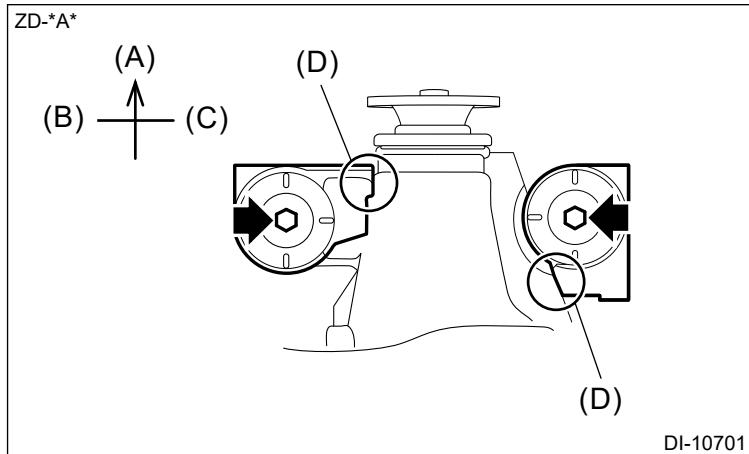


DI-10591

(4) Tighten the bolt with the plate contacting the differential carrier as shown in the figure.

**Tightening torque:**

95 N·m (9.7 kgf-m, 70.1 ft-lb)



(A) Front side

(C) Right side

(D) Set against the differential carrier.

(B) Left side

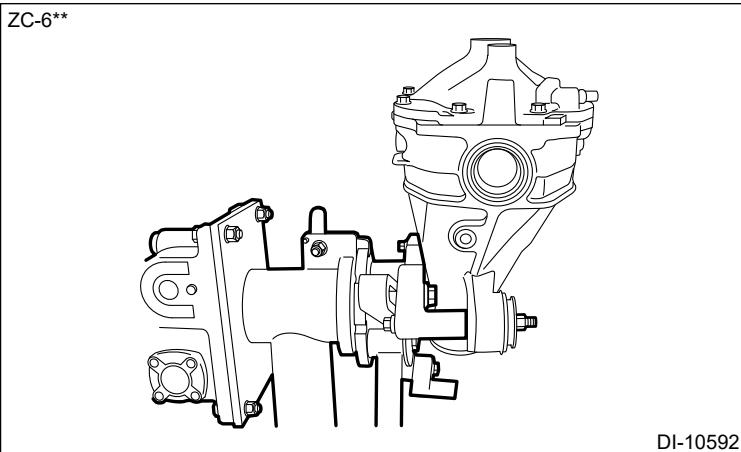
7. Install the stabilizer rear. [Ref. to REAR SUSPENSION>Stabilizer>INSTALLATION.](#)
8. Install the propeller shaft. [Ref. to PROPELLER SHAFT / DRIVE SHAFT / AXLE>Propeller Shaft>INSTALLATION.](#)
9. Fill differential gear oil. [Ref. to DIFFERENTIALS>Differential Gear Oil>REPLACEMENT.](#)
10. Release the shift lock and shift the select lever to the "P range". (AT model) [Ref. to CONTROL SYSTEMS>Select Lever>INSTALLATION.](#)
11. Apply the parking brake.

## DIFFERENTIALS > Rear Differential

### DISASSEMBLY



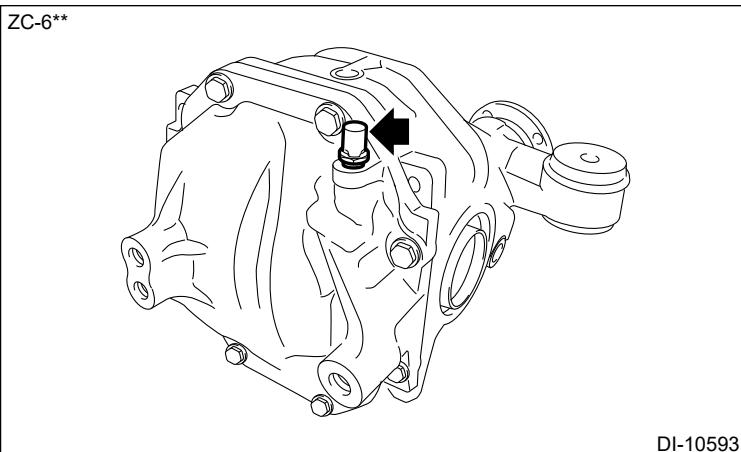
- Set the rear differential to the engine stand, etc.



- Remove the rear differential breather plug.

**Note:**

**Perform this procedure only when required.**

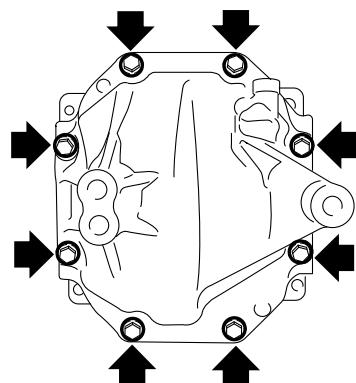


- Remove the bolts, and remove the differential carrier cover while lightly tapping with a plastic hammer.

**Caution:**

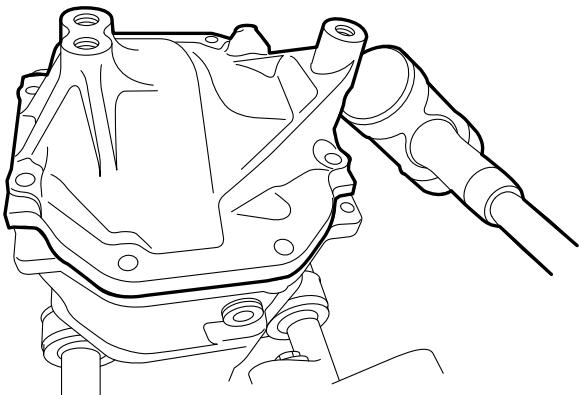
**Be careful not to damage the mating surface of the differential carrier.**

ZC-6\*\*



DI-10594

ZD-A\*



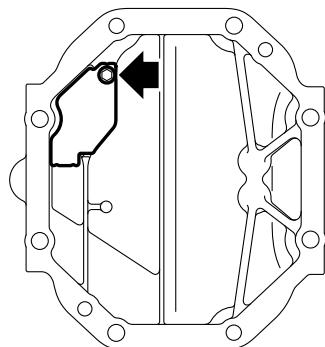
DI-10691

4. Remove the breather plug oil deflector.

**Note:**

**Perform this procedure only when required.**

ZC-6\*\*



DI-10595

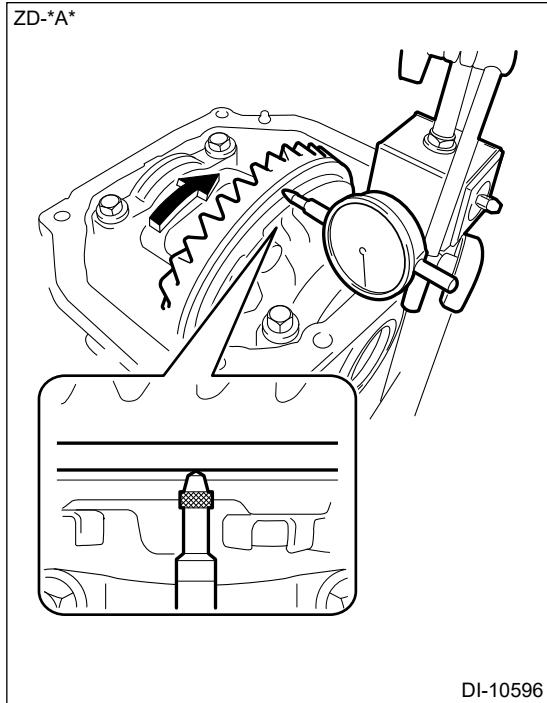
5. Remove the liquid gasket from the differential carrier and the differential carrier cover.
6. Using a magnet stand and dial gauge (spindle type), measure the runout of the ring gear.

**Note:**

- Contact a dial gauge (spindle type) at a right angle to the back surface of the ring gear.
- If it exceeds the limit, remove the ring gear and inspect runout of the differential case.

**Service limit:**

0.07 mm (0.003 in)



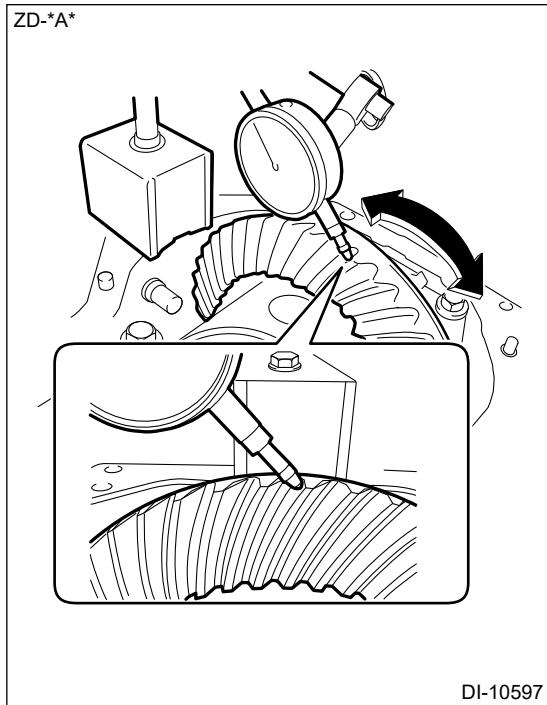
7. Using a magnet stand and dial gauge (spindle type), measure the backlash between the ring gear and drive pinion.

**Note:**

- Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.
- Secure the companion flange by hand and turn the differential case in the rotating direction.
- Measure at 3 points or more.

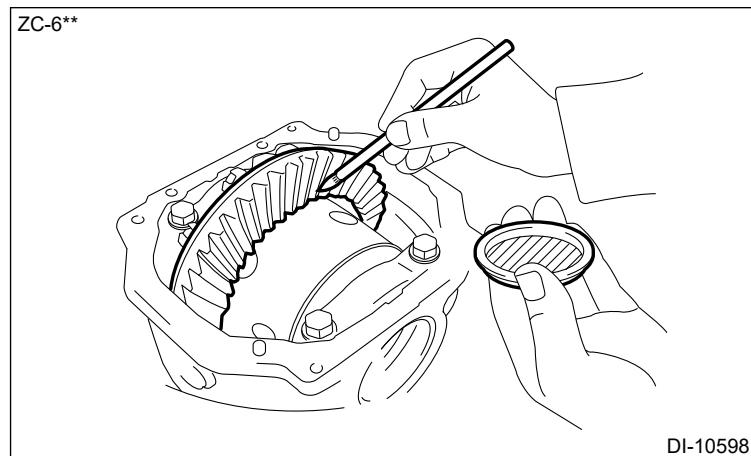
**Specification:**

0.11 — 0.22 mm (0.004 — 0.009 in)



**8.** Check the tooth contact between the ring gear and the drive pinion.

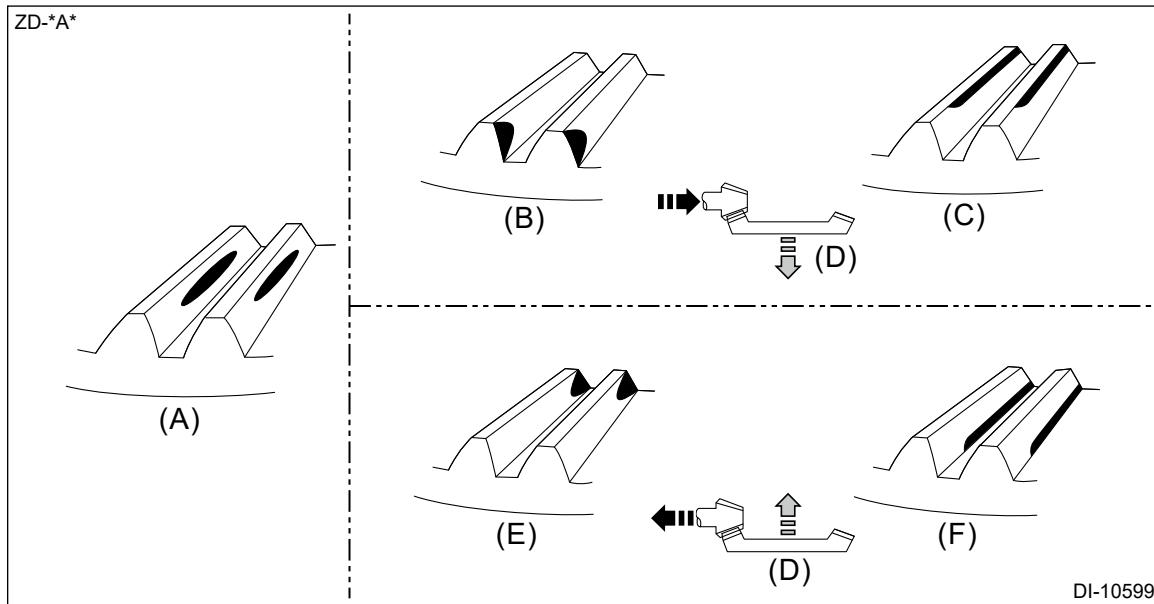
- (1) Apply a thin uniform coat of lead-free red dye on both teeth surfaces of the ring gear.



- (2) Check the tooth contact pattern by rotating the companion flange in the forward and backward directions until a definite contact pattern appears on the ring gear tooth face.

**Note:**

**Check at four points.**



- |                                   |   |                   |
|-----------------------------------|---|-------------------|
| (A) Correct tooth contact pattern | (C) Face contact  | (E) Toe contact   |
| (B) Heel contact                  | (D) Adjustment method: Adjust<br>the drive pinion and the ring<br>gear in the direction of arrow. | (F) Flank contact |

**9.** Check the companion flange runout. [Ref. to DIFFERENTIALS>Rear Differential>INSPECTION.](#)

**10.** Check the drive pinion preload.

(1) Using a torque wrench, check preload of the drive pinion within the ring gear backlash.

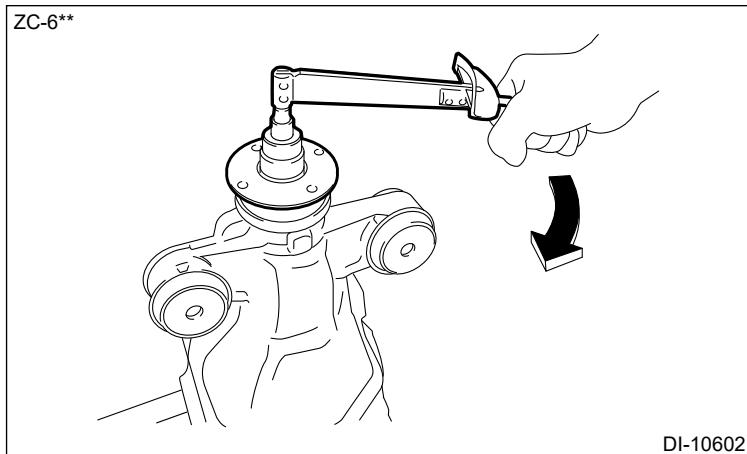
**Specification:**

1.87 – 2.17 N·m (0.19 – 0.22 kgf-m, 1.38 – 1.60 ft-lb)

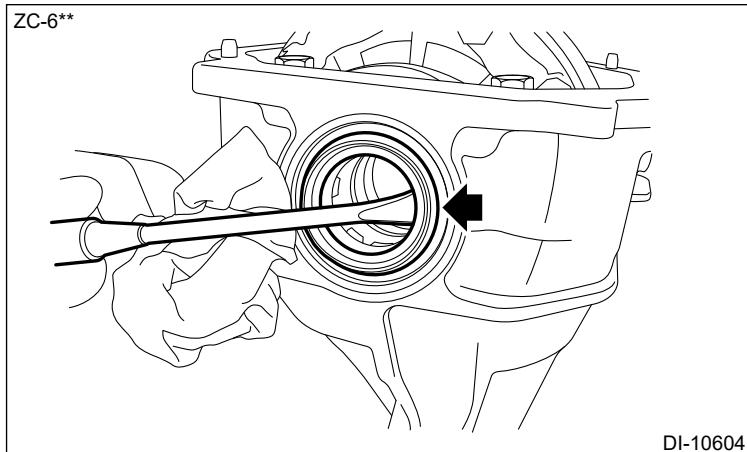
(2) Using a torque wrench, check overall preload with the drive pinion contacting the ring gear tooth surface.

**Specification:**

2.19 – 2.70 N·m (0.22 – 0.28 kgf-m, 1.62 – 1.99 ft-lb)



**11.** Remove the rear differential side gear shaft oil seal using a flat tip screwdriver wrapped with protection tape, etc.

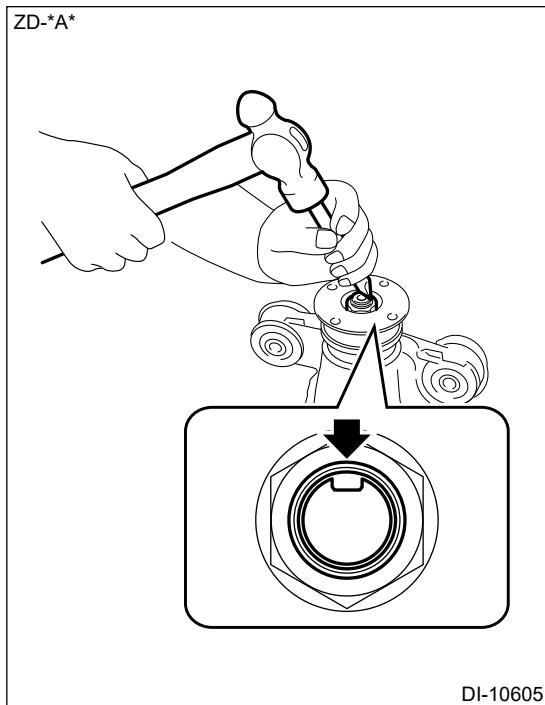


**12.** Remove the companion flange.

- (1) Lift the crimped section of the drive pinion nut.

**Caution:**

**Fully lift the crimped section to prevent the thread damage.**



- (2) Using ST1 and ST2, secure the companion flange and remove the drive pinion nut.

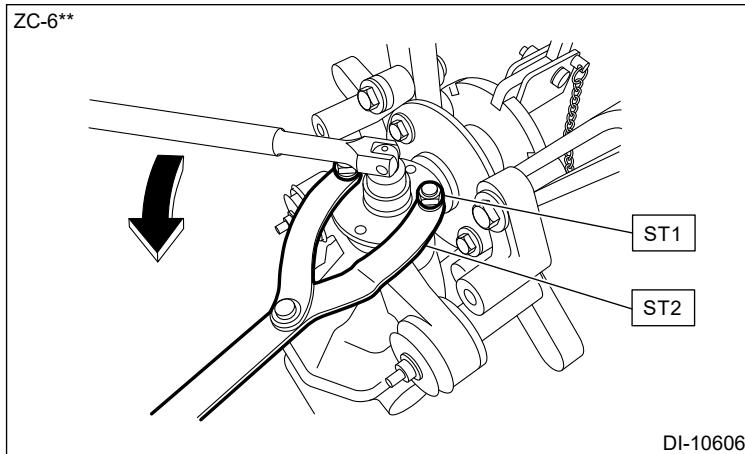
**Caution:**

**During operation, support the engine stand.**

**Preparation tool:**

ST1: PULLEY WRENCH PIN SET (18334AA030)

ST2: PULLEY WRENCH (18355AA000)



(3) Remove the companion flange using ST1, ST2, ST3, ST4, and ST5.

**Caution:**

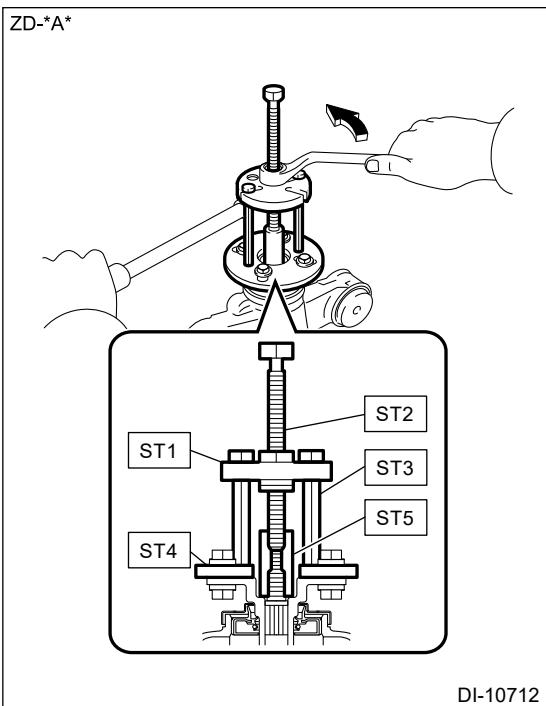
**Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

ST1: UPPER PLATE (09951-03010)  
 ST2: CENTER BOLT (09953-03010)  
 ST3: ARM (09954-03010)  
 ST4: LOWER PLATE 130 (09955-03030)  
 ST5: ADAPTER 20 (09956-03030)



**13.** Remove the rear differential dust deflector from the companion flange using the ST1, ST2 and a press.

**Caution:**

**Be careful not to drop the companion flange.**

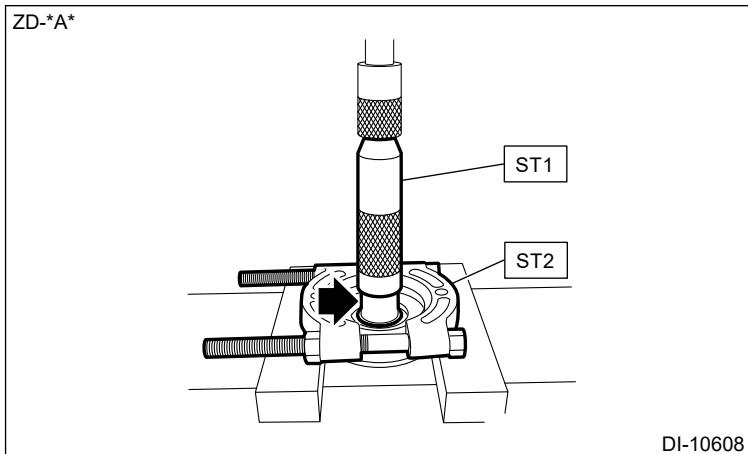
**Note:**

- Perform this procedure only when required.
- In order to ensure the contact surface between ST1 and the rear differential dust deflector, perform the operation while tightening the nut of the ST2.

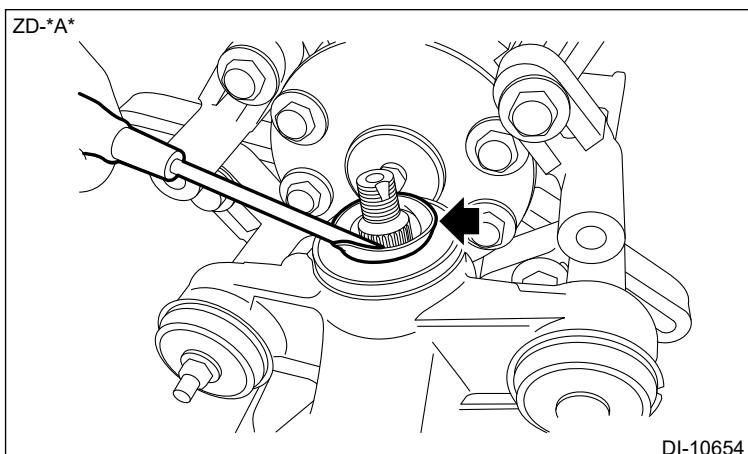
**Preparation tool:**

ST1: RACE 4-5 INSTALLER (499877000)

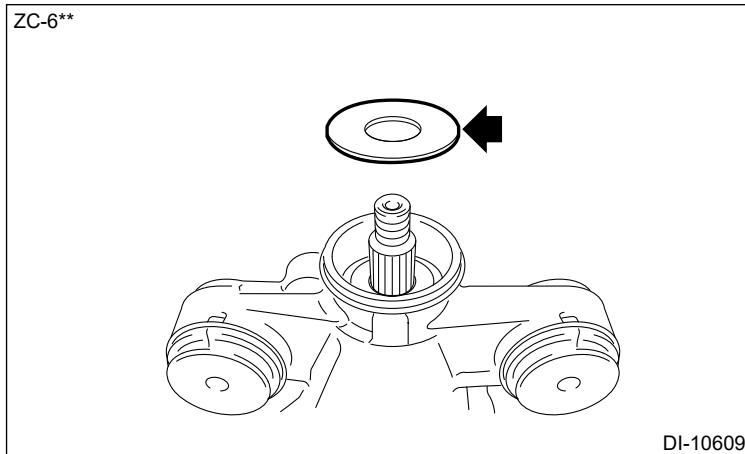
ST2: BEARING REMOVER (09950-00020)



- 14.** Remove the rear differential carrier oil seal using a flat tip screwdriver wrapped with protection tape, etc.



- 15.** Remove the drive pinion oil slinger.



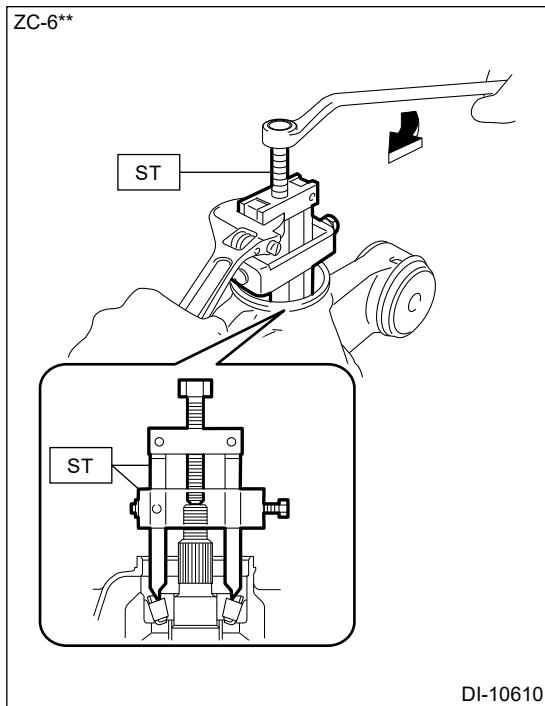
**16.** Remove the drive pinion tapered roller bearing FR (inner race) using the ST.

**Caution:**

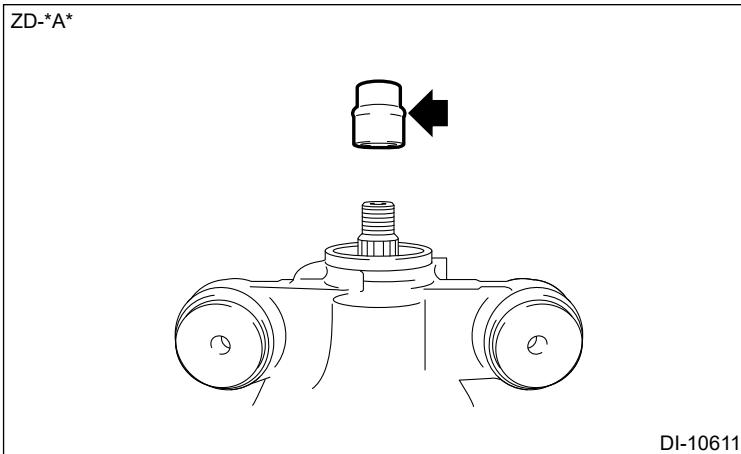
- **Apply the molybdenum grease on the thread and the threaded end of the ST before use.**
- **When reusing the drive pinion tapered roller bearing, be careful not to deform the drive pinion tapered roller bearing FR (inner race).**

**Preparation tool:**

ST: DRIVE PINION FRONT BEARING REMOVER (09556-22010)



**17.** Remove the drive pinion bearing spacer.



### **18. Remove the differential case.**

- (1) Place identification marks (A) on the bearing cap and the differential carrier.

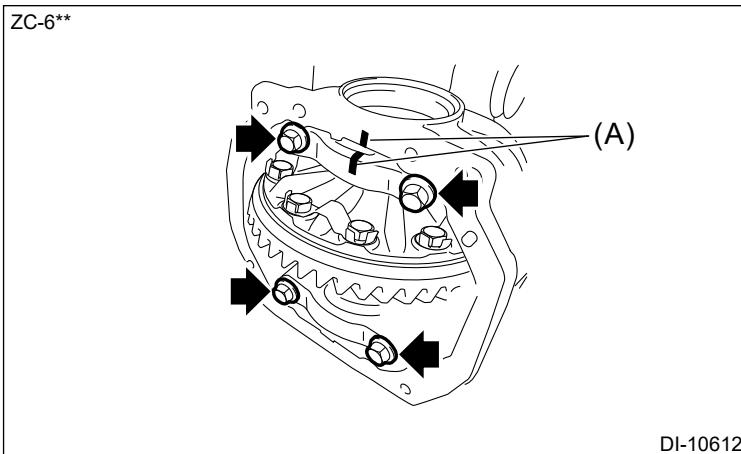
**Note:**

**Place identification marks on one side only.**

- (2) Remove the bearing caps.

**Caution:**

**The bearing cap and the differential carrier are manufactured as a unit; do not change the combination.**



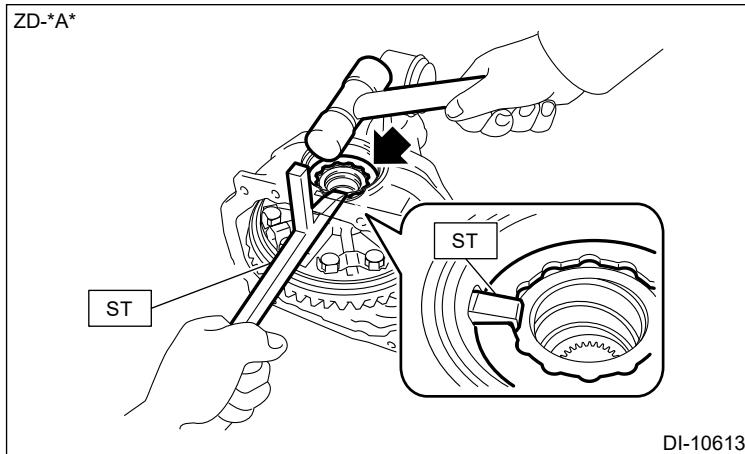
- (3) Using the ST and a plastic hammer, remove the right and left side gear shaft washers from the differential carrier.

**Note:**

- **For reference for when reassembling, measure and record thickness of the right and left side gear shaft washers.**
- **Place an identification mark on the side gear shaft washers so as not to confuse the right and left.**

**Preparation tool:**

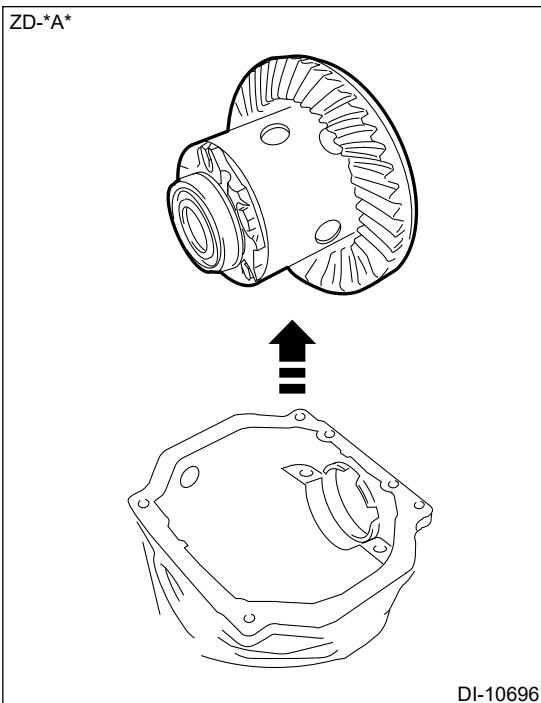
**ST: DIFFERENTIAL SIDE WASHER REMOVER AND REPLACER (09504-22012)**



(4) Remove the differential case and the case bearing as a unit.

**Caution:**

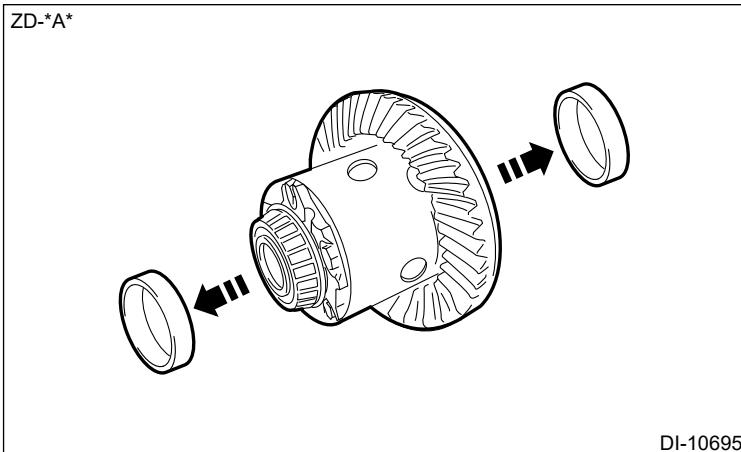
**Be careful not to damage the case bearing and the ring gear.**



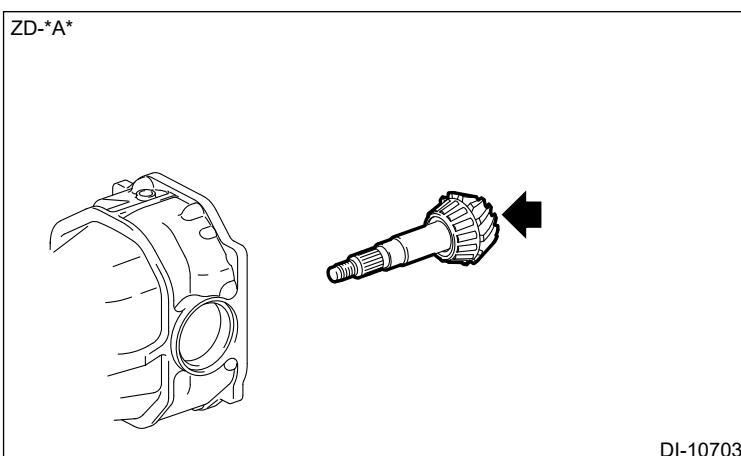
(5) Remove the case bearing (outer race) from the differential case.

**Note:**

**Place an identification mark on the case bearing (outer race) so as not to confuse the right and left.**



**19.** Remove the drive pinion from the differential carrier.



**20.** Remove the drive pinion tapered roller bearing RR (inner race).

(1) Remove the drive pinion tapered roller bearing RR (inner race) using the ST and a press.

**Caution:**

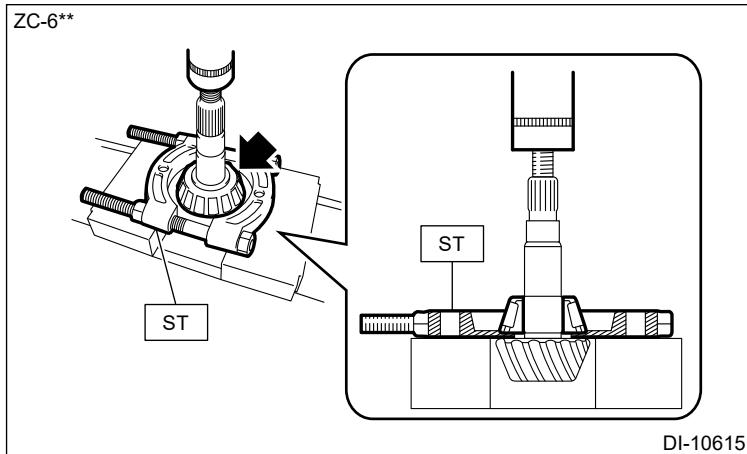
**Be careful not to drop the drive pinion.**

**Note:**

**In order to ensure the contact surface of ST, perform the operation while tightening the nut of the ST.**

**Preparation tool:**

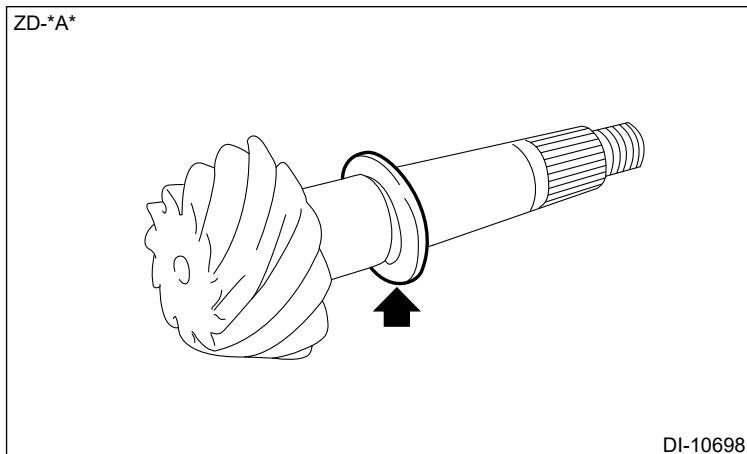
ST: BEARING REMOVER (09950-00020)



(2) Remove the drive pinion washer.

**Note:**

**For reference for when reassembling, measure and record thickness of the drive pinion washer.**



**21.** Using a brass bar and a hammer, remove the drive pinion tapered roller bearing RR (outer race) and the drive pinion tapered roller bearing FR (outer race).

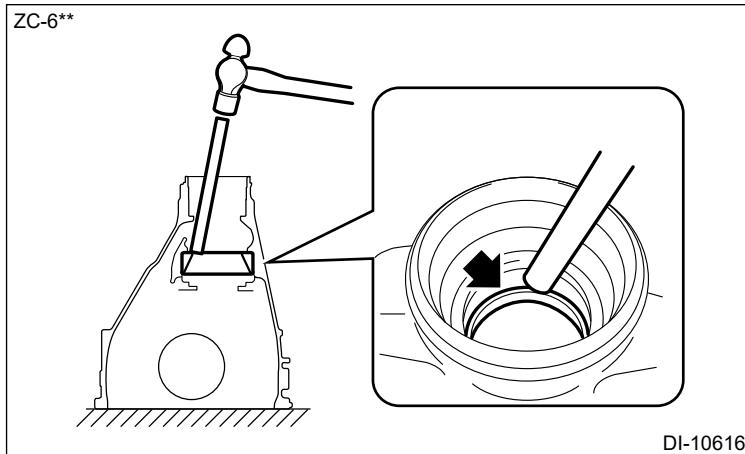
**Caution:**

**Be careful not to damage the differential carrier.**

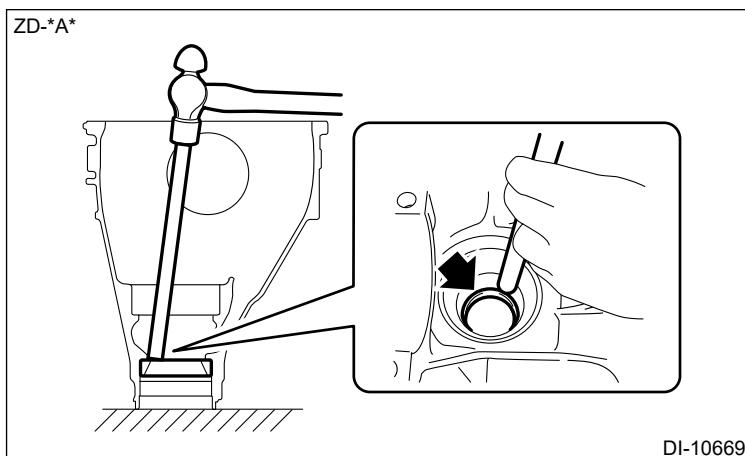
**Note:**

- Remove by lightly and evenly tapping the entire perimeter.
- Always let the brass bar come in contact within the range of the drive pinion tapered roller bearing RR (outer race) and the drive pinion tapered roller bearing FR (outer race).

- Drive pinion tapered roller bearing RR (outer race)



- Drive pinion tapered roller bearing FR (outer race)



## 22. Remove the ring gear from the differential case.

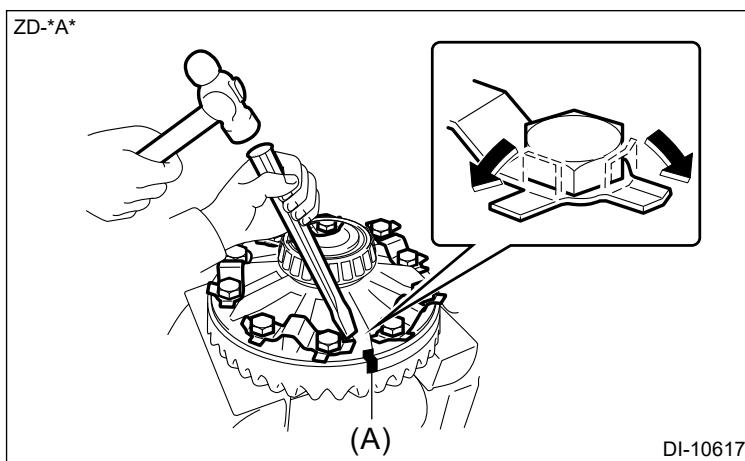
- (1) Using a vise, secure the differential case.

**Caution:**

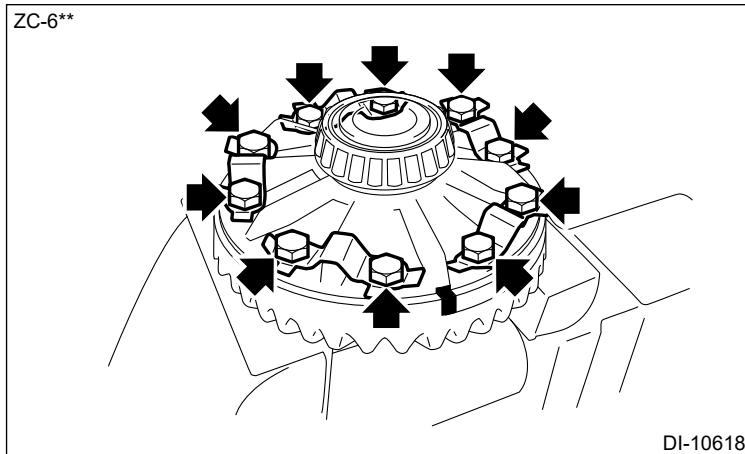
- Place aluminum plates or wooden pieces between the contacting surfaces of the vise and differential case to prevent differential case damage.
- Do not tighten the vise more than necessary.

- (2) Place an alignment mark (A) on the connection of the differential case and the ring gear.

- (3) Unlock the lock plate.



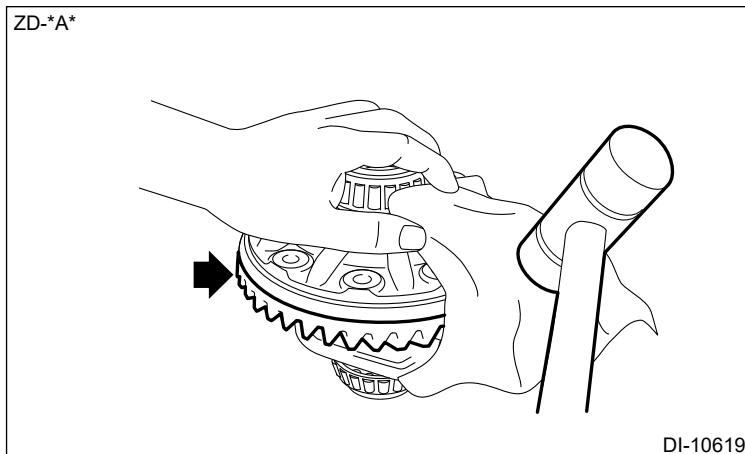
- (4) Remove the bolts, then remove the lock plate.



(5) Remove the ring gear by lightly and evenly tapping the periphery with a plastic hammer.

**Caution:**

**Cover the tooth surface side of the ring gear with a cloth to prevent the ring gear damage.**



**23.** Measure runout of the differential case.

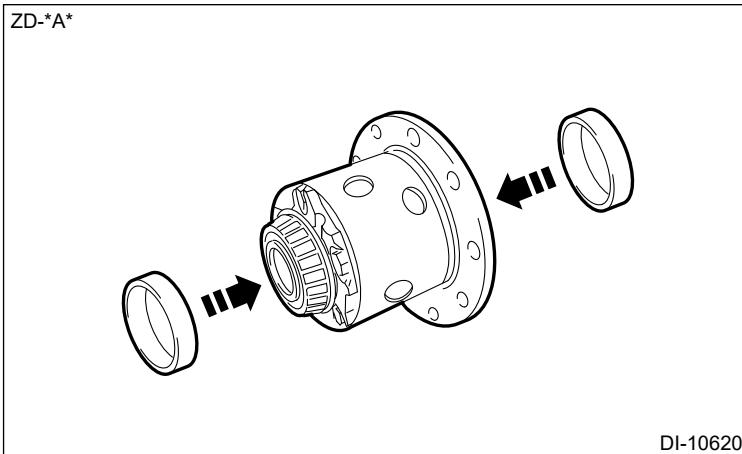
**Note:**

**Perform this procedure only when the measurement result of the ring gear runout exceeds the limit.**

(1) Install the case bearing (outer race).

**Caution:**

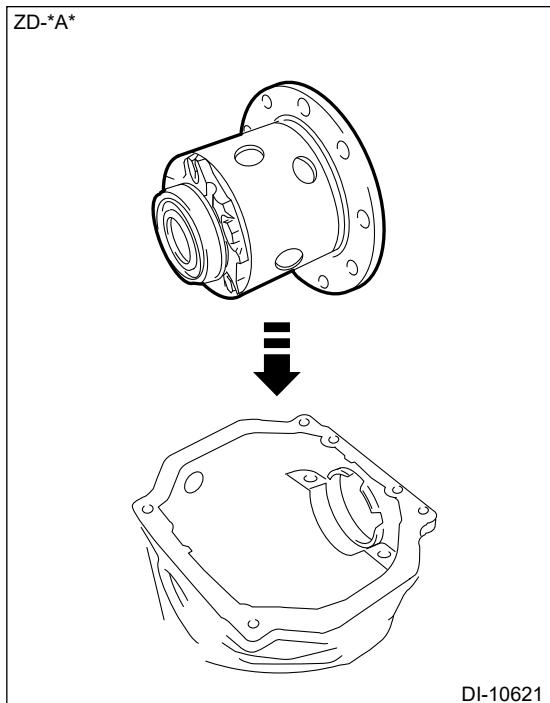
**Be careful not to mix up the case bearings (outer races) RH and LH.**



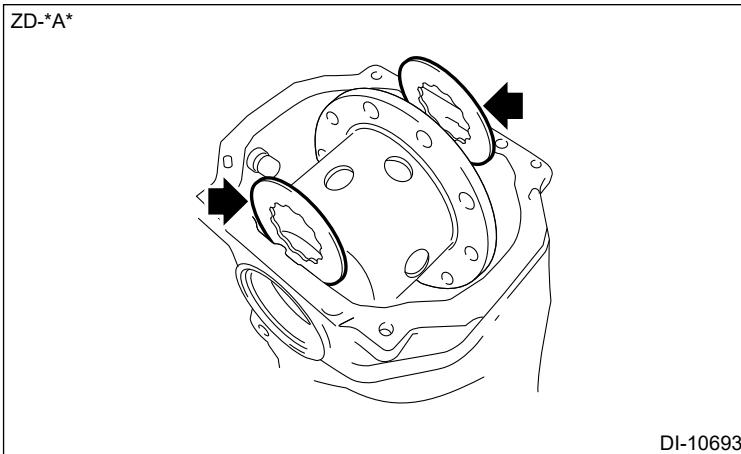
(2) Set the differential case and the case bearing as a unit to the differential carrier.

**Caution:**

**Be careful not to damage the case bearing.**



(3) Install a side gear shaft washer with suitable thickness while avoiding play of the case bearing.



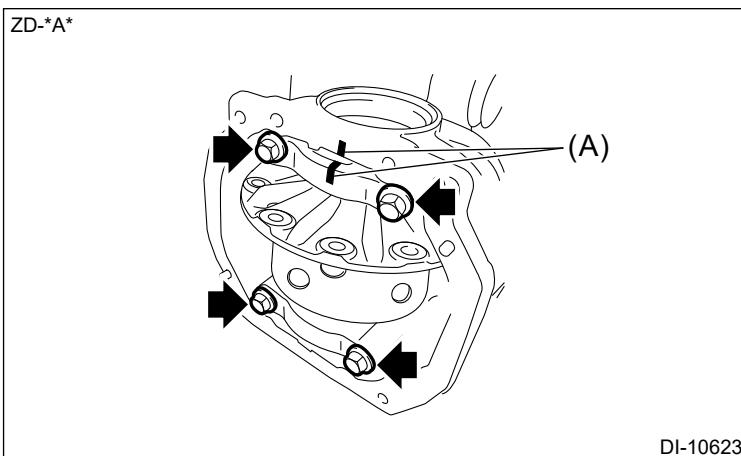
- (4) Align the identification marks (A), and install the bearing cap to the differential carrier.

**Caution:**

**The bearing cap and the differential carrier are manufactured as a unit; do not change the combination.**

**Tightening torque:**

85 N·m (8.7 kgf-m, 62.7 ft-lb)



- (5) Using a magnet stand and dial gauge (spindle type), measure the runout of the differential case.

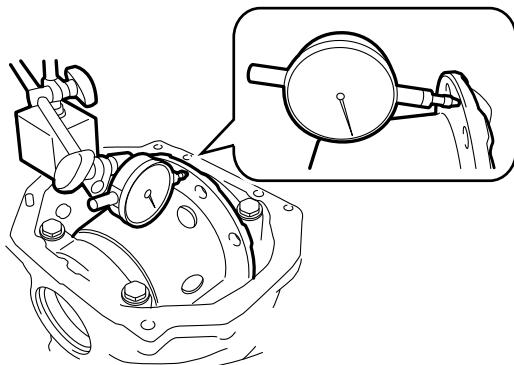
**Note:**

**Contact a dial gauge (spindle type) at a right angle to the mounting surface of the ring gear.**

**Service limit:**

0.07 mm (0.003 in)

ZD-\*A\*



DI-10624

- (6) Remove the bearing cap from the differential carrier.

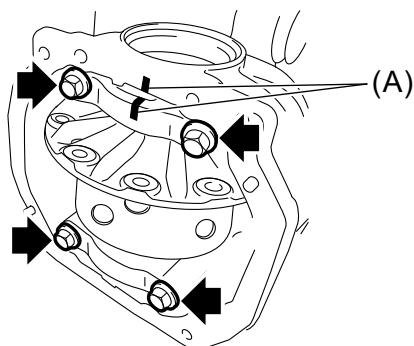
**Caution:**

**The bearing cap and the differential carrier are manufactured as a unit; do not change the combination.**

**Note:**

**Check that there are identification marks (A).**

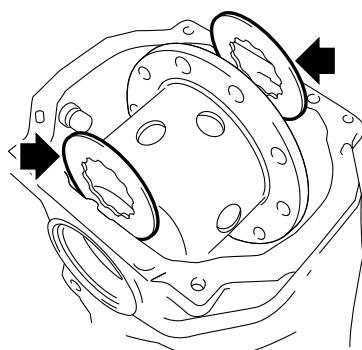
ZD-\*A\*



DI-10623

- (7) Remove the side gear shaft washer.

ZD-\*A\*

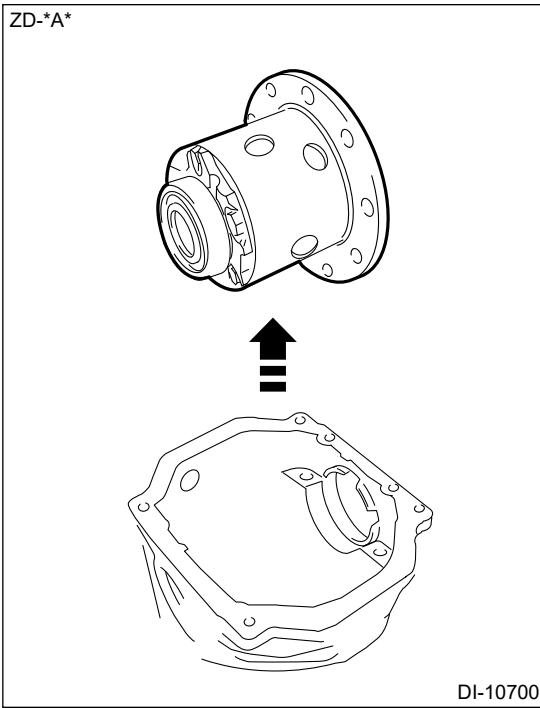


DI-10693

- (8) Remove the differential case and the case bearing as a unit.

**Caution:**

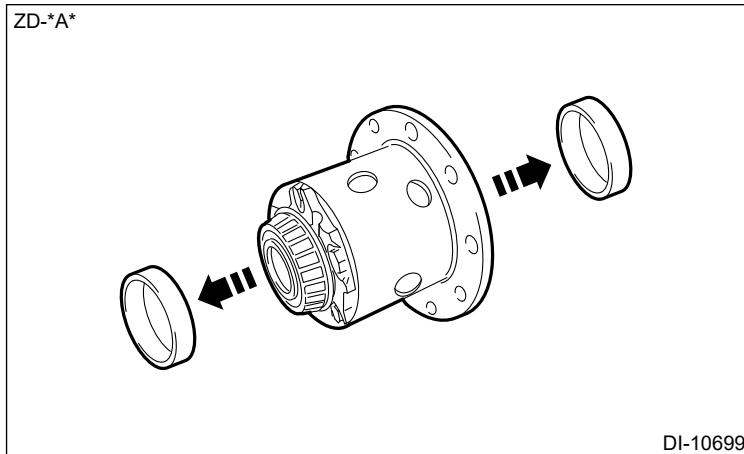
**Be careful not to damage the case bearing.**



(9) Remove the case bearing (outer race) from the differential case.

**Note:**

**Place an identification mark on the case bearing (outer race) so as not to confuse the right and left.**



**24.** Using ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8, ST9, and ST10, remove the case bearing (inner race) from the differential case.

**Caution:**

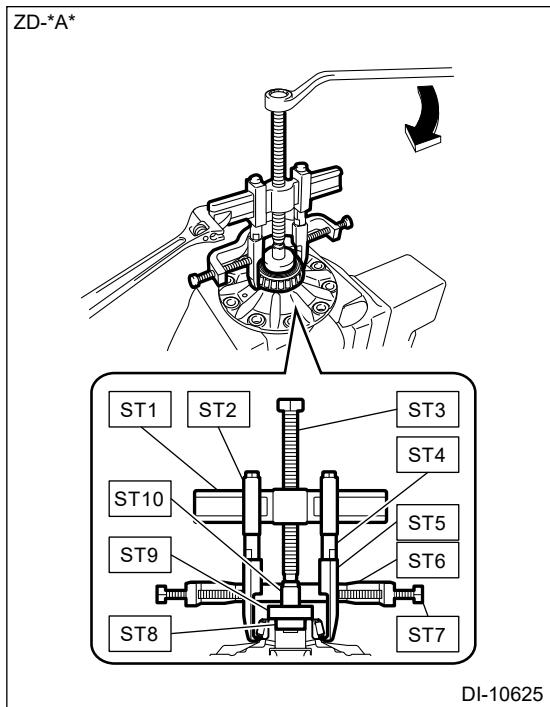
- When reusing the case bearing, be careful not to deform the case bearing (inner race).
- Apply the molybdenum grease on the thread and the threaded end of the ST3 before use.

**Note:**

- Perform this procedure only when the case bearing or the differential case is replaced.
- Engage the claw of ST5 with the bearing through the cutout portion of the differential case.
- Place an identification mark on the case bearing (inner race) so as not to confuse the right and left.

**Preparation tool:**

ST1: HANGER 200 (09951-04020)  
ST2: SLIDE ARM (09952-04010)  
ST3: CENTER BOLT 200 (09953-04030)  
ST4: ARM 25 (09954-04010)  
ST5: CLAW NO. 6 (09955-04061)  
ST6: ATTACHMENT (09957-04010)  
ST7: HOLDER (09958-04011)  
ST8: REPLACER 35 (09951-00350)  
ST9: REPLACER 48 (09951-00480)  
ST10: ADAPTER (09952-06010)



## DIFFERENTIALS > Rear Differential

### ASSEMBLY

1. Install the ring gear to the differential case.

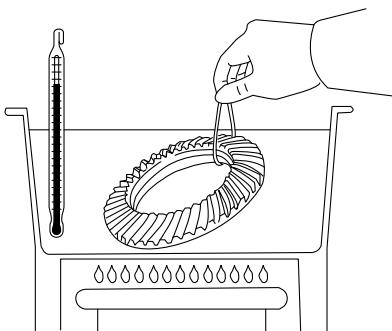
(1) Clean the screw hole of the differential case.

(2) Heat the ring gear up to about 100 °C (212 °F) with hot water.

**Caution:**

**The ring gear becomes hot. When performing the operation, be sure to wear thick gloves and be careful not to burn yourself.**

ZD-\*A\*



DI-10627

(3) Completely wipe off grease and water from the mating surface between the ring gear and the differential case.

(4) Using a vise, secure the differential case.

**Caution:**

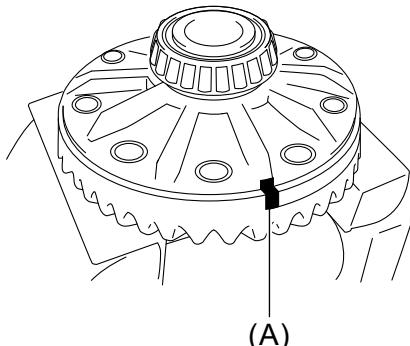
- Place aluminum plates or wooden pieces between the contacting surfaces of the vise and differential case to prevent differential case damage.
- Do not tighten the vise more than necessary.

(5) Align the alignment marks (A) on the differential case and the ring gear, and then set the ring gear on the differential case.

**Note:**

- Align the screw hole of the differential case and the bolt hole of the ring gear.
- Set before the ring gear cools down.

ZD-\*A\*



DI-10683

- (6) Set a new lock plate and temporarily fit the bolts which hold the ring gear.

**Caution:**

**Fit the bolts after the ring gear cools down sufficiently.**

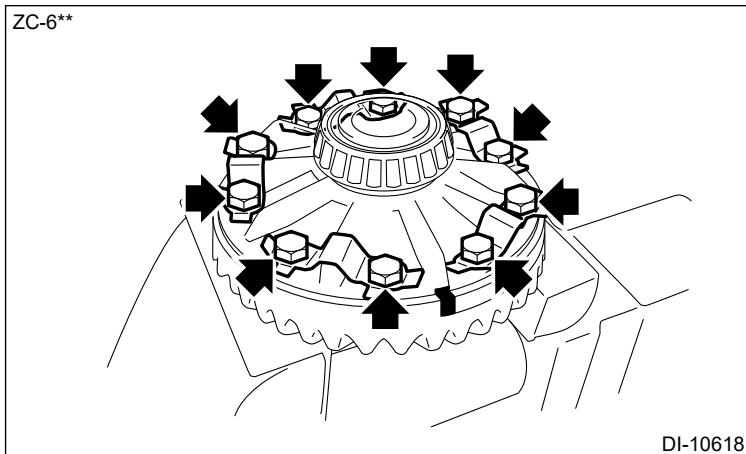
- (7) Tighten the bolts which hold the ring gear.

**Note:**

**Tighten the bolts diagonally in several stages.**

**Tightening torque:**

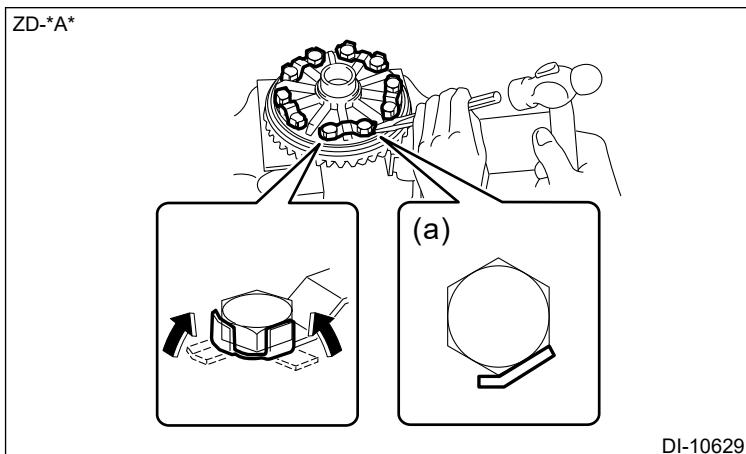
97 N·m (9.9 kgf-m, 71.5 ft-lb)



- (8) Raise the claws of the lock plates to lock.

**Note:**

**If the lock plate claw comes to the bolt head corner as shown in (a) in the figure, raise the claw in the way that it closely contacts with the right side of the bolt head.**



2. Press-fit the case bearing (inner race) using the ST1, ST2 and a press.

**Caution:**

- When the case bearing is replaced with a new part, do not apply the differential gear oil to the case bearing.
- When the case bearing is replaced with a new part, replace the outer race and the inner race as a set.
- Be careful not to deform the case bearing (inner race).

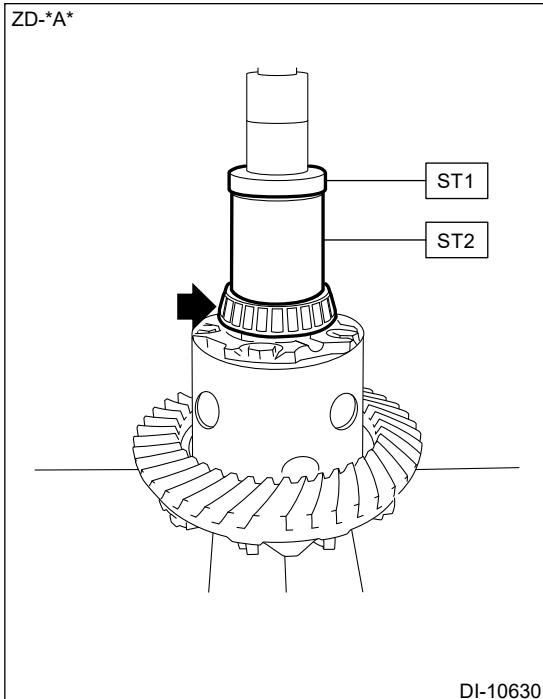
**Note:**

- Perform this procedure only when the case bearing or the differential case is replaced.
- Press-fit until the case bearing (inner race) is in close contact with the differential case.
- Align ST1 and ST2 with the center of the differential case and press-fit them.

**Preparation tool:**

ST1: BASE (09710-04081)

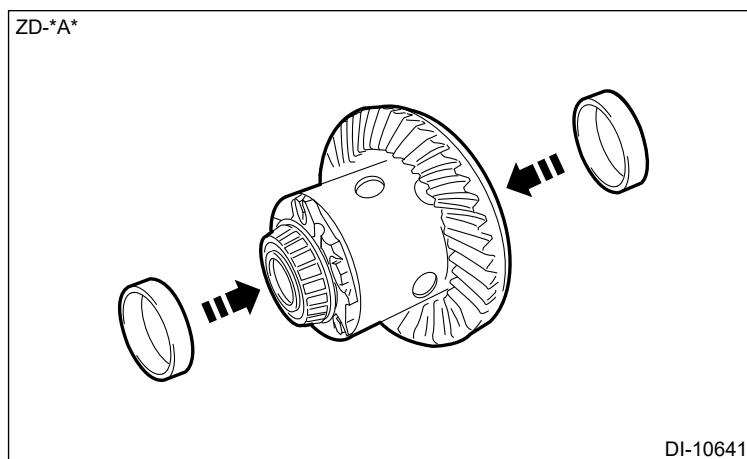
ST2: DRIFT (398477702)

**3.** Check for runout of the ring gear.

## (1) Install the case bearing (outer race).

**Caution:**

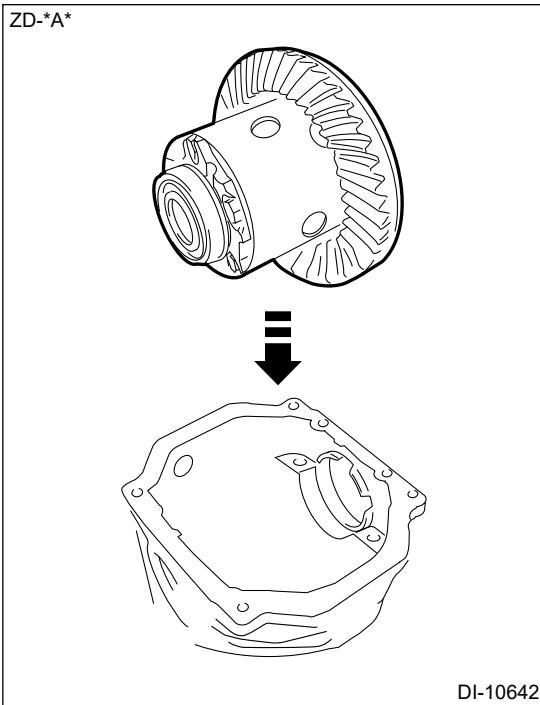
- When the case bearing is replaced with a new part, do not apply the differential gear oil to the case bearing.
- Be careful not to mix up the case bearings (outer races) RH and LH.



## (2) Set the differential case and the case bearing as a unit to the differential carrier.

**Caution:**

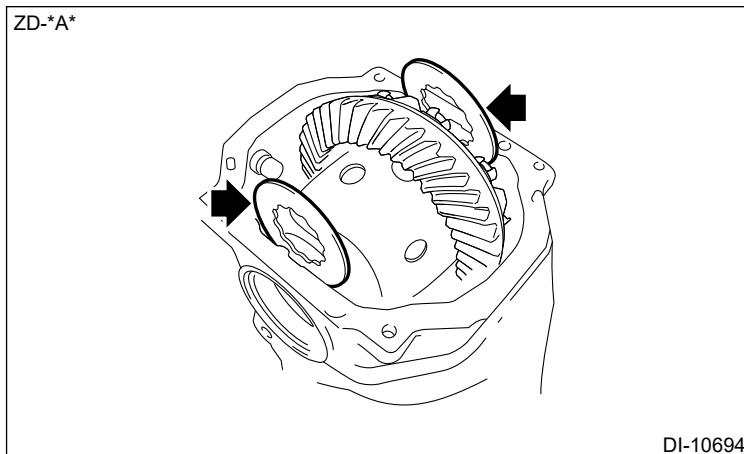
**Be careful not to damage the case bearing and the ring gear.**



(3) Install a side gear shaft washer with suitable thickness while avoiding play of the case bearing.

**Note:**

- When the final gear set or the case bearings are replaced, select a side gear shaft washer with thinner thickness than the value measured during disassembly.
- When the drive pinion, ring gear and case bearings are reused, select a side gear shaft washer with the same thickness as the value measured during disassembly.



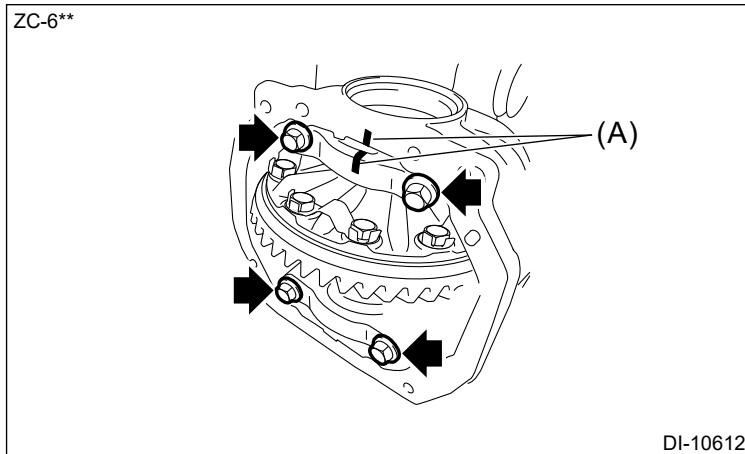
(4) Align the identification marks (A), and install the bearing cap to the differential carrier.

**Caution:**

**The bearing cap and the differential carrier are manufactured as a unit; do not change the combination.**

**Tightening torque:**

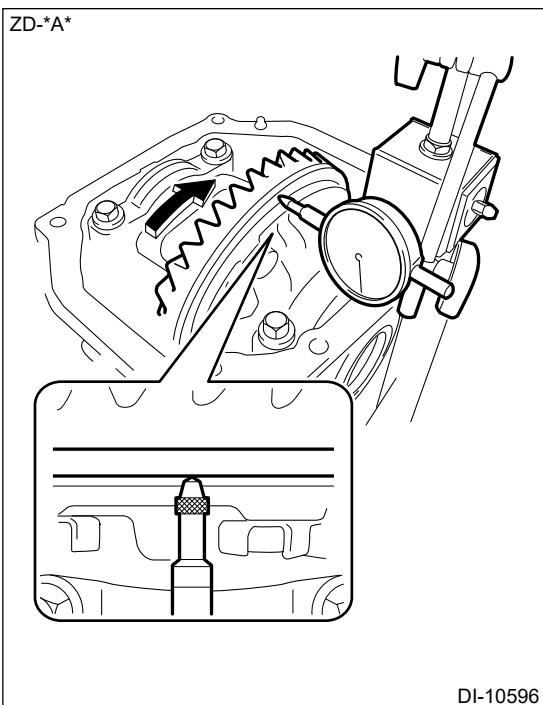
85 N·m (8.7 kgf-m, 62.7 ft-lb)



- (5) Inspect the runout of the ring gear by contacting a dial gauge (spindle type) to the back surface of the ring gear.

**Service limit:**

0.07 mm (0.003 in)



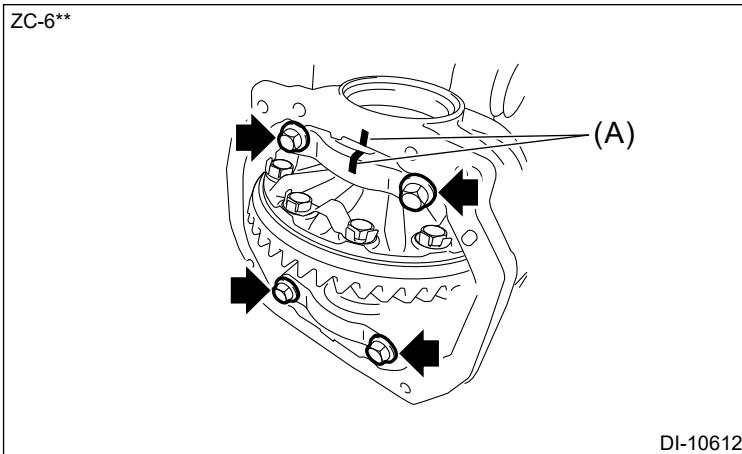
- (6) Remove the bearing cap from the differential carrier.

**Caution:**

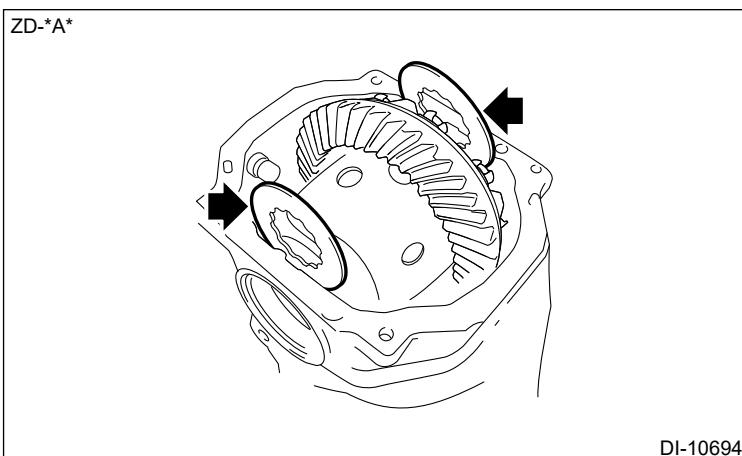
The bearing cap and the differential carrier are manufactured as a unit; do not change the combination.

**Note:**

Check that there are identification marks (A).



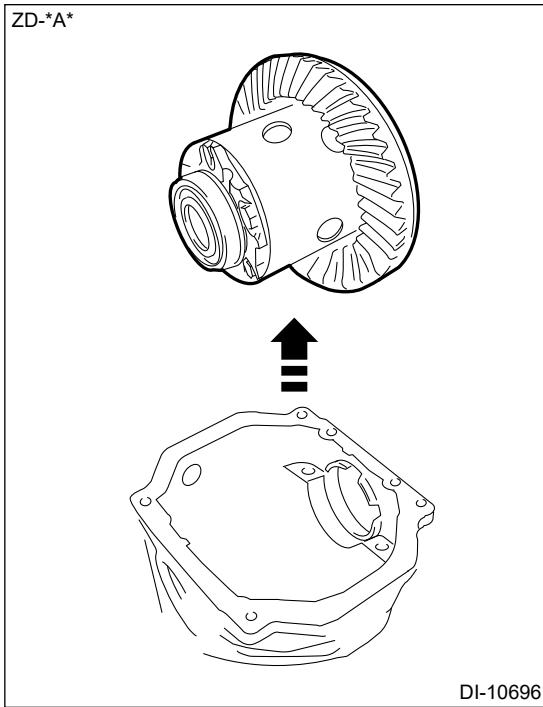
(7) Remove the side gear shaft washer.



(8) Remove the differential case.

**Caution:**

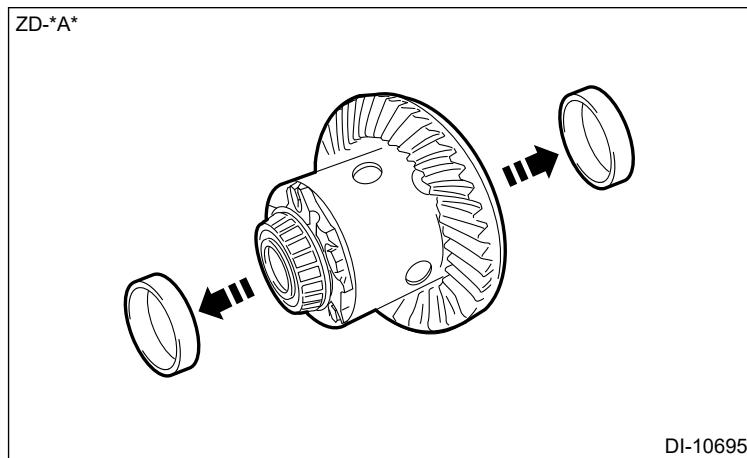
**Be careful not to damage the case bearing and the ring gear.**



(9) Remove the case bearing (outer race) from the differential case.

**Note:**

**Place an identification mark on the case bearing (outer race) so as not to confuse the right and left.**

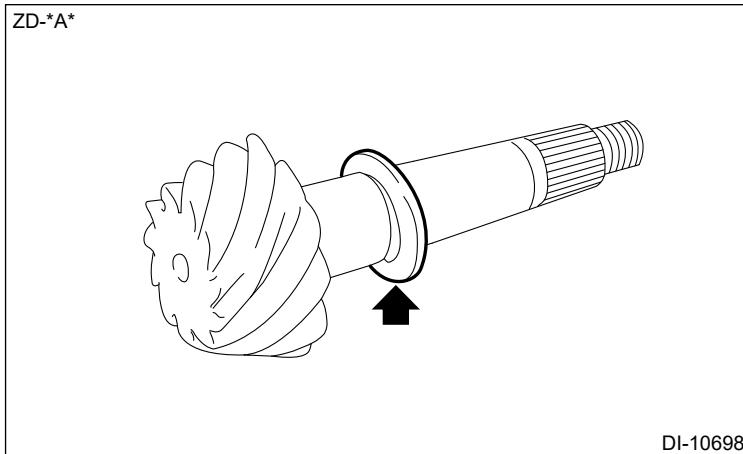


4. Install the drive pinion tapered roller bearing RR (inner race) to the drive pinion.

(1) Install the drive pinion washer.

**Note:**

- Temporarily install the drive pinion tapered roller bearing RR (inner race).
- Use the drive pinion washer of the same thickness as the value measured during disassembly.
- The drive pinion washer has no orientation.



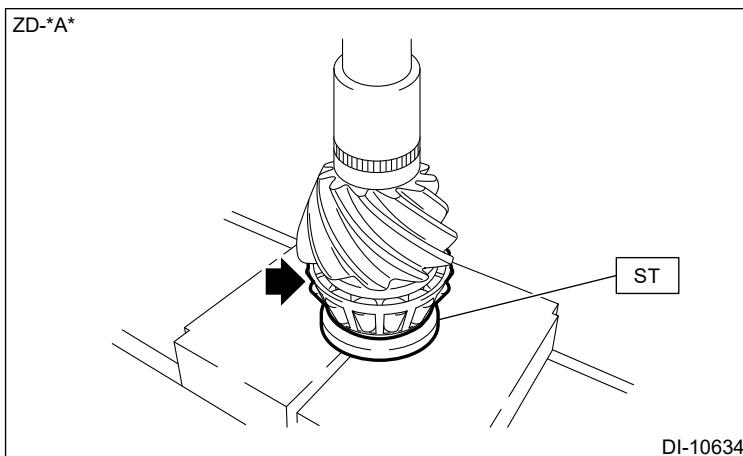
- (2) Press-fit the drive pinion tapered roller bearing RR (inner race) using the ST and a press.

**Caution:**

**When the drive pinion tapered roller bearing is replaced with a new part, do not apply the differential gear oil to the drive pinion tapered roller bearing FR (inner race).**

**Preparation tool:**

ST: DIFFERENTIAL DRIVE PINION REAR BEARING CONE REPLACER (09506-30012)



5. Press-fit the drive pinion tapered roller bearing RR (outer race) to the differential carrier using the ST1, ST2 and a press.

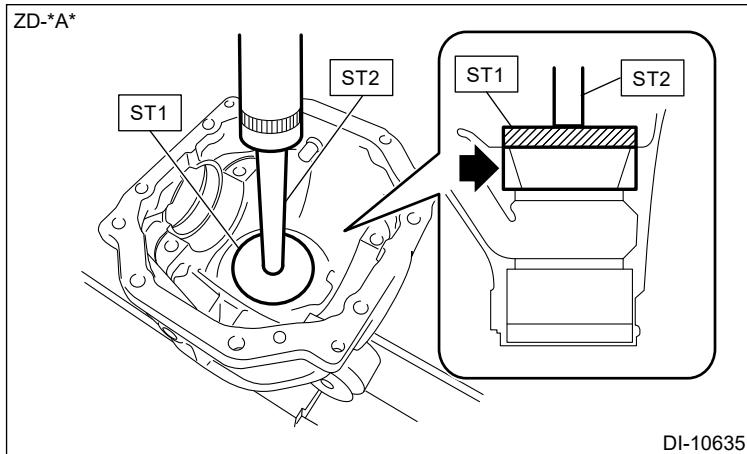
**Caution:**

**When the drive pinion tapered roller bearing is replaced with a new part, do not apply the differential gear oil to the drive pinion tapered roller bearing RR (outer race).**

**Preparation tool:**

ST1: REPLACER 89 (09951-00890)

ST2: HANDLE 200 (09951-07200)



6. Press-fit the drive pinion tapered roller bearing FR (outer race) to the differential carrier using the ST1, ST2 and a press.

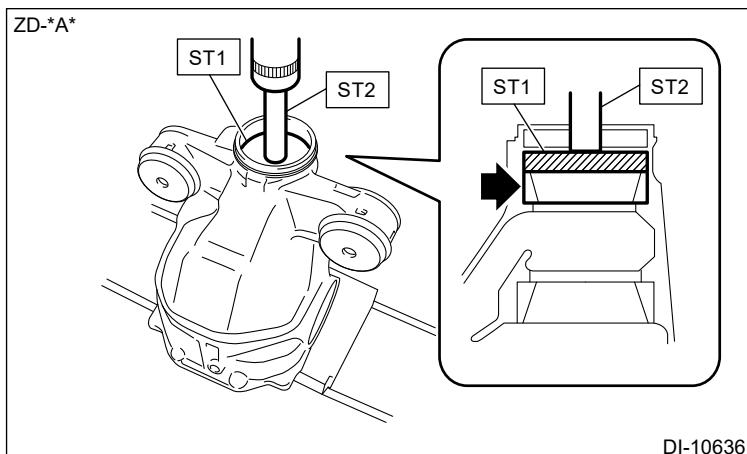
**Caution:**

**When the drive pinion tapered roller bearing is replaced with a new part, do not apply the differential gear oil to the drive pinion tapered roller bearing FR (outer race).**

**Preparation tool:**

ST1: REPLACER 72 (09951-00720)

ST2: HANDLE 100 (09951-07100)



7. Press-fit the rear differential dust deflector to the companion flange using the ST1, ST2 and a press.

**Caution:**

- Always use a new rear differential dust deflector.
- Gradually press-fit the rear differential dust deflector while checking the condition so as not to deform it.
- Remove a burr if it occurs when press-fitting.

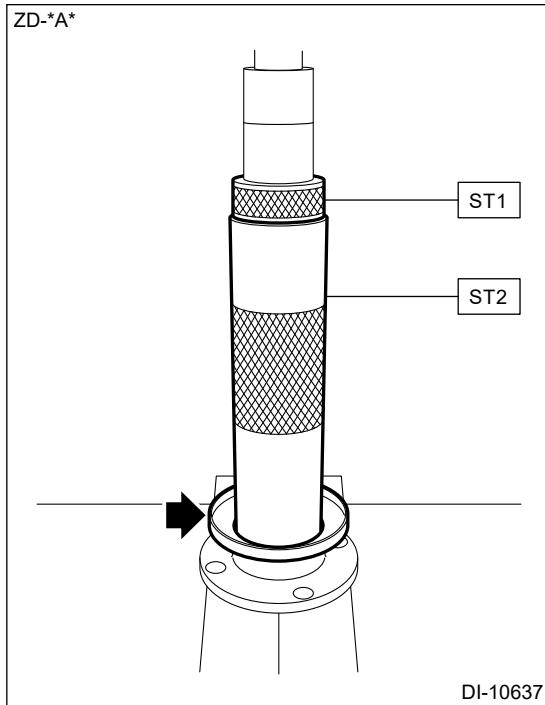
**Note:**

- Perform this procedure only when the rear differential dust deflector is removed from the companion flange.
- Press-fit until the rear differential dust deflector is in close contact with the companion flange.

**Preparation tool:**

ST1: INSTALLER (499277200)

ST2: GAUGE (499225500)



### 8. Adjust the drive pinion preload.

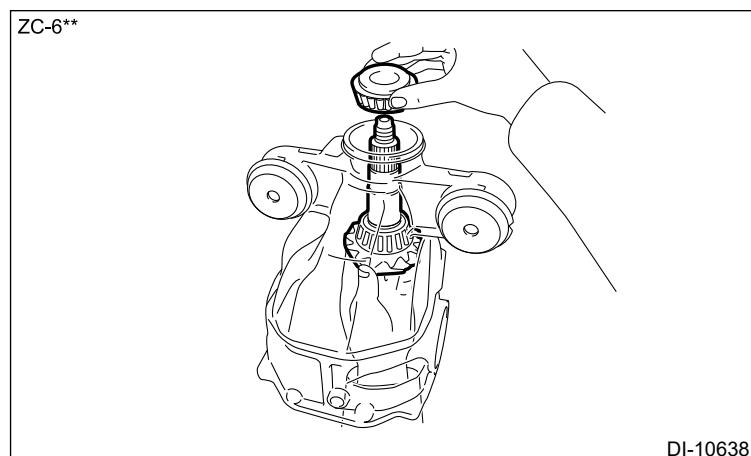
- (1) Set the drive pinion on differential carrier, and hold it with hands.
- (2) Set the drive pinion tapered roller bearing FR (inner race).

**Caution:**

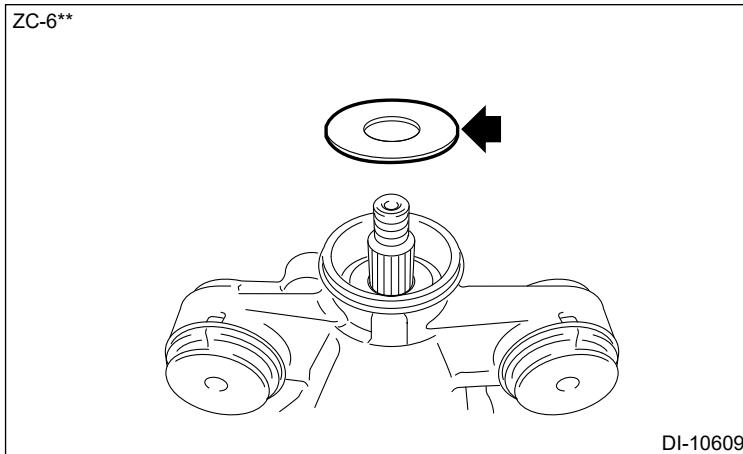
- Be careful not to drop the drive pinion.
- When the drive pinion tapered roller bearing is replaced with a new part, do not apply the differential gear oil to the drive pinion tapered roller bearing FR (inner race).

**Note:**

**Install the drive pinion bearing spacer and the rear differential carrier oil seal after checking and adjusting the tooth contact of ring gear and drive pinion.**



- (3) Install the drive pinion oil slinger to the differential carrier.



(4) Install the companion flange to the differential carrier using ST1, ST2, ST3, ST4, and ST5.

**Caution:**

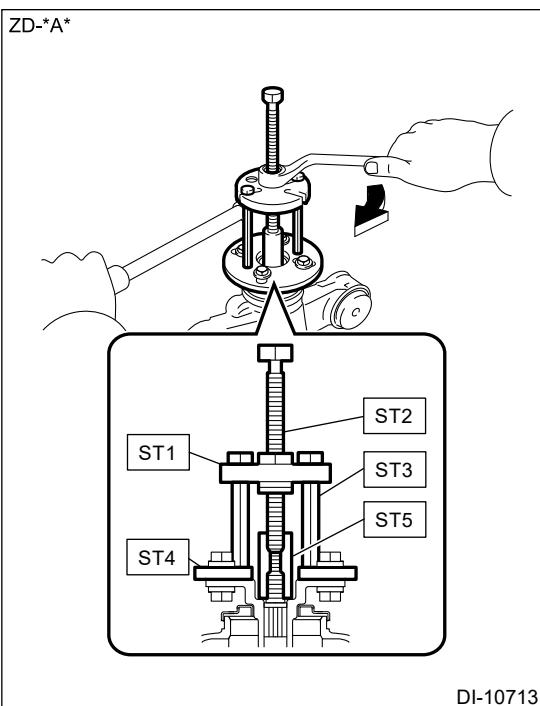
- **Install the companion flange until there is a small play in the drive pinion.**
- **Be careful not to drop the drive pinion.**
- **Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

ST1: UPPER PLATE (09951-03010)  
 ST2: CENTER BOLT (09953-03010)  
 ST3: ARM (09954-03010)  
 ST4: LOWER PLATE 130 (09955-03030)  
 ST5: ADAPTER 20 (09956-03030)



(5) Using ST1 and ST2, secure the companion flange and tighten the drive pinion nut.

**Caution:**

- Be sure to use a new drive pinion nut.
- During operation, support the engine stand.

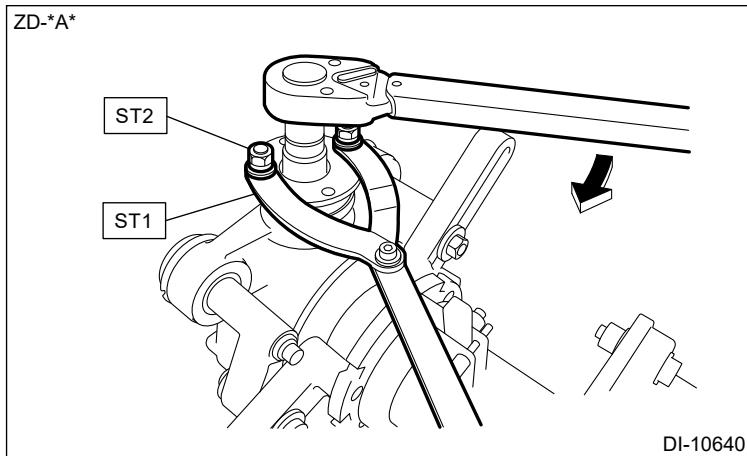
**Preparation tool:**

ST1: PULLEY WRENCH (18355AA000)

ST2: PULLEY WRENCH PIN SET (18334AA030)

**Tightening torque:**

100 N·m (10.2 kgf-m, 73.8 ft-lb)



(6) Turn the drive pinion several times for better fitting of the bearing.

(7) Using a torque wrench, gradually tighten the drive pinion nut so that the drive pinion preload is within the specified range.

**Caution:**

- Be careful not to overtighten as a bearing spacer is not attached.
- Immediately stop tightening if the preload is still insufficient after the tightening torque exceeds the limit.

**Note:**

- Apply differential gear oil to the threaded portion of the drive pinion.
- For reference for when checking the overall preload, record the adjustment value.

**Specification:**

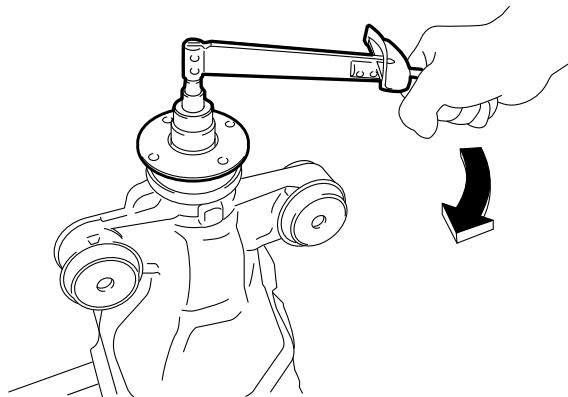
If the drive pinion tapered roller bearing is replaced with a new part: 1.77 – 2.14 N·m (0.18 – 0.22 kgf-m, 1.31 – 1.58 ft-lb)

If the drive pinion tapered roller bearing is reused: 1.77 – 2.07 N·m (0.18 – 0.21 kgf-m, 1.31 – 1.53 ft-lb)

**Service limit:**

338 N·m (34.5 kgf-m, 249.3 ft-lb)

ZC-6\*\*



DI-10602

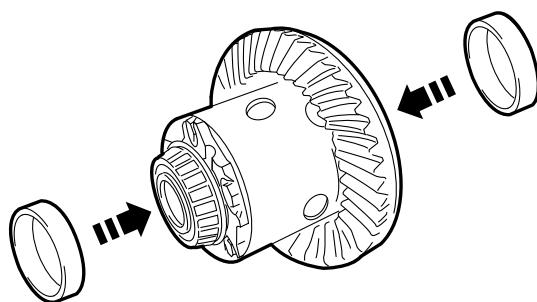
**9. Install the differential case.**

- (1) Install the case bearing (outer race).

**Caution:**

**Be careful not to mix up the case bearings (outer races) RH and LH.**

ZD-\*A\*

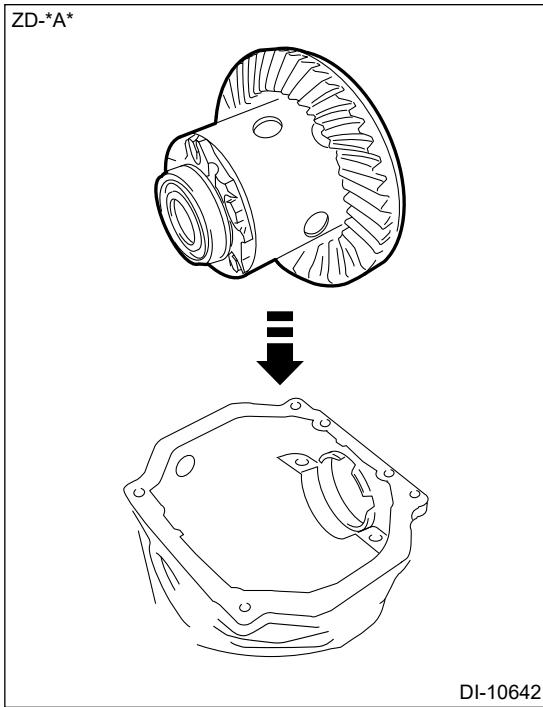


DI-10641

- (2) Set the differential case and the case bearing as a unit to the differential carrier.

**Caution:**

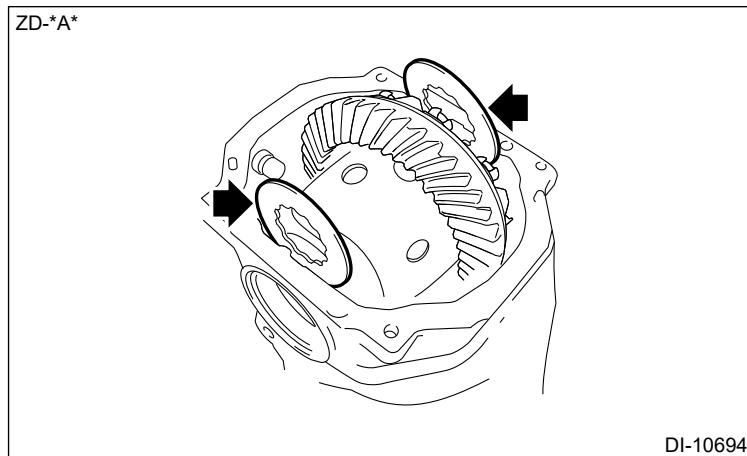
**Be careful not to damage the case bearing and the ring gear.**



(3) Install a side gear shaft washer with suitable thickness while avoiding play of the case bearing.

**Note:**

- When the final gear set or the case bearings are replaced, select and install a side gear shaft washer with thinner thickness than the value measured during disassembly.
- When the drive pinion, ring gear and case bearings are reused, select and install a side gear shaft washer with the same thickness as the value measured during disassembly.



**10.** Adjust the ring gear and drive pinion backlash.

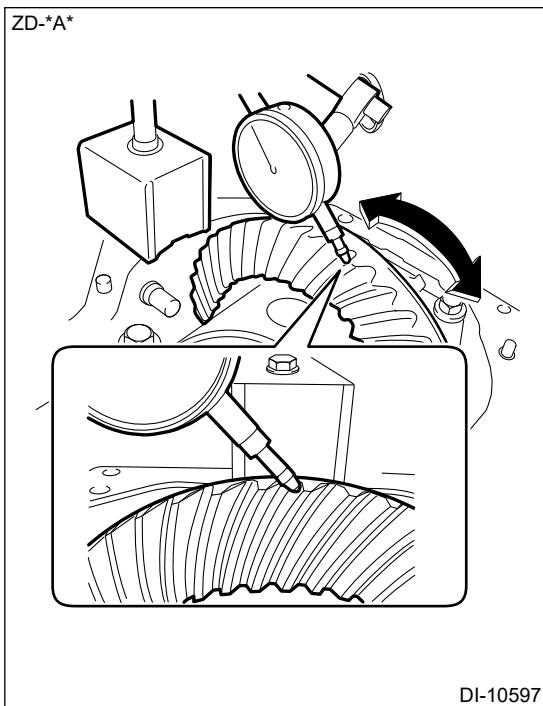
- (1) Using a magnet stand and dial gauge (spindle type), measure the backlash between the ring gear and drive pinion.

**Note:**

- **Measure at 3 points or more.**
- **Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.**
- **Secure the companion flange by hand and turn the differential case in the rotating direction.**
- **For reference for when selecting the side gear shaft washer, record the measured value.**
- **For reference for when selecting the side gear shaft washer, inspect the tooth contact between the ring gear and the drive pinion.**

**Specification:**

0.11 — 0.22 mm (0.004 — 0.009 in)



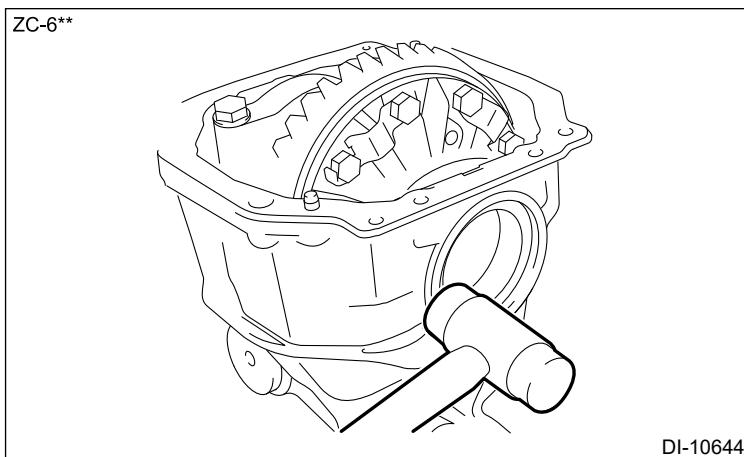
- (2) Select a proper side gear shaft washer based on the inspection results of the ring gear backlash and tooth contact.

**Side gear shaft washer type**

<b>Thickness mm (in)</b>	<b>Identificati on mark</b>	<b>Thickness mm (in)</b>	<b>Identificati on mark</b>
2.57 — 2.59 (0.1012 — 0.1020)	01	3.03 — 3.05 (0.1193 — 0.1201)	47
2.59 — 2.61 (0.1020 — 0.1028)	32	3.05 — 3.07 (0.1201 — 0.1209)	17
2.61 — 2.63 (0.1028 — 0.1035)	33	3.07 — 3.09 (0.1209 — 0.1217)	48
2.63 — 2.65 (0.1035 — 0.1043)	03	3.09 — 3.11 (0.1217 — 0.1224)	49
2.65 — 2.67 (0.1043 — 0.1051)	34	3.11 — 3.13 (0.1224 — 0.1232)	19
2.67 — 2.69 (0.1051 — 0.1059)	35	3.13 — 3.15 (0.1232 — 0.1240)	50
2.69 — 2.71 (0.1059 — 0.1067)	05	3.15 — 3.17 (0.1240 — 0.1248)	51
2.71 — 2.73 (0.1067 — 0.1075)	36	3.17 — 3.19 (0.1248 — 0.1256)	21
2.73 — 2.75 (0.1075 — 0.1083)	37	3.19 — 3.21 (0.1256 — 0.1264)	52

<b>Thickness mm (in)</b>	<b>Identification mark</b>	<b>Thickness mm (in)</b>	<b>Identification mark</b>
2.75 – 2.77 (0.1083 – 0.1091)	07	3.21 – 3.23 (0.1264 – 0.1272)	53
2.77 – 2.79 (0.1091 – 0.1098)	38	3.23 – 3.25 (0.1272 – 0.1280)	23
2.79 – 2.81 (0.1098 – 0.1106)	39	3.25 – 3.27 (0.1280 – 0.1287)	54
2.81 – 2.83 (0.1106 – 0.1114)	09	3.27 – 3.29 (0.1287 – 0.1295)	55
2.83 – 2.85 (0.1114 – 0.1122)	40	3.29 – 3.31 (0.1295 – 0.1303)	25
2.85 – 2.87 (0.1122 – 0.1130)	41	3.31 – 3.33 (0.1303 – 0.1311)	56
2.87 – 2.89 (0.1130 – 0.1138)	11	3.33 – 3.35 (0.1311 – 0.1319)	57
2.89 – 2.91 (0.1138 – 0.1146)	42	3.35 – 3.37 (0.1319 – 0.1327)	27
2.91 – 2.93 (0.1146 – 0.1154)	43	3.37 – 3.39 (0.1327 – 0.1335)	58
2.93 – 2.95 (0.1154 – 0.1161)	13	3.39 – 3.41 (0.1335 – 0.1343)	59
2.95 – 2.97 (0.1161 – 0.1169)	44	3.41 – 3.43 (0.1343 – 0.1350)	29
2.97 – 2.99 (0.1169 – 0.1177)	45	3.43 – 3.45 (0.1350 – 0.1358)	60
2.99 – 3.01 (0.1177 – 0.1185)	15	3.45 – 3.47 (0.1358 – 0.1366)	61
3.01 – 3.03 (0.1185 – 0.1193)	46	3.47 – 3.49 (0.1366 – 0.1374)	31

(3) Using a plastic hammer, lightly tap the differential carrier for better fitting of the case bearing and the side gear shaft washer.



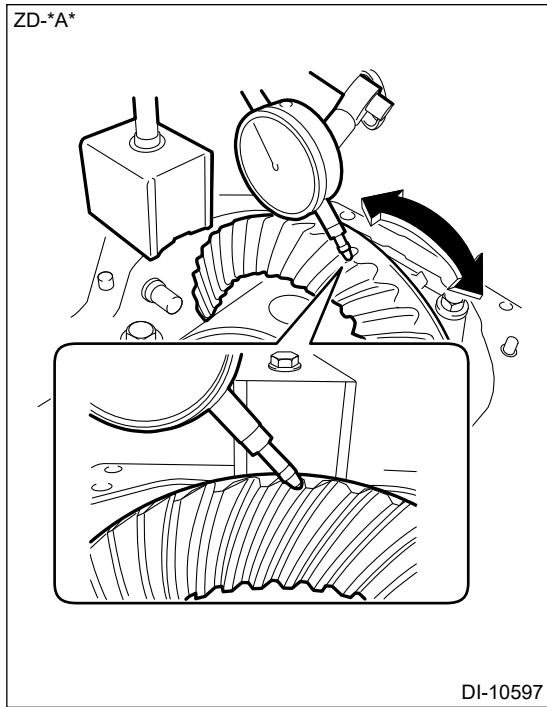
(4) Using a magnet stand and dial gauge (spindle type), measure the backlash between the ring gear and drive pinion.

**Note:**

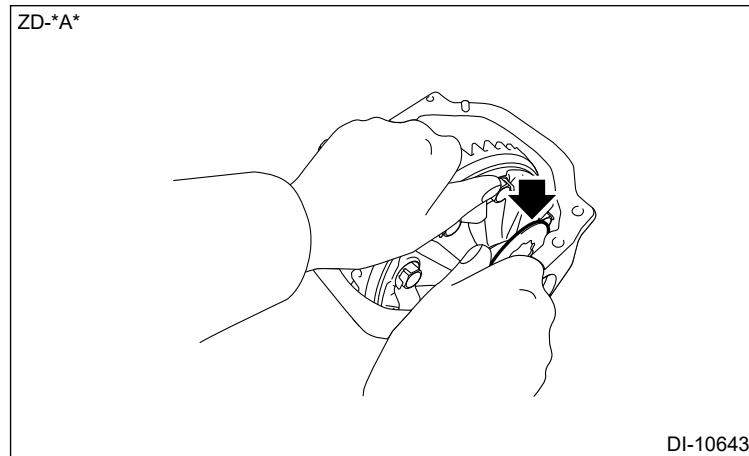
- Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.
- Secure the companion flange by hand and turn the differential case in the rotating direction.

**Specification:**

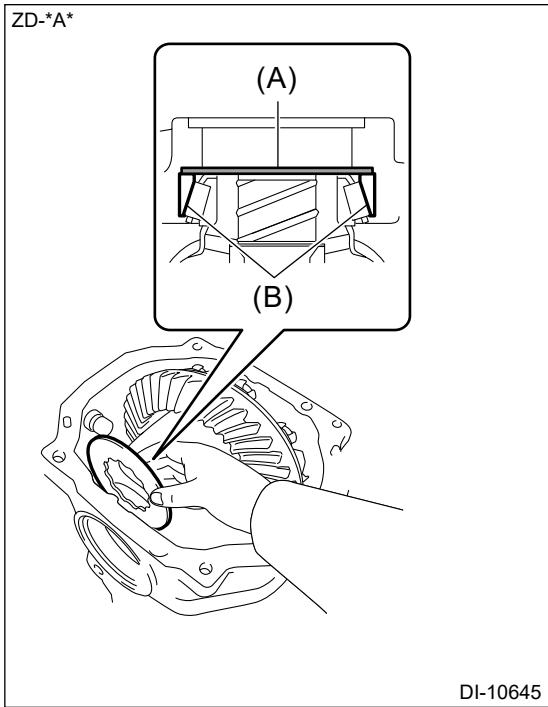
0.11 – 0.22 mm (0.004 – 0.009 in)



(5) If the measured value is out of the standard, select the side gear shaft washer which allows the backlash to be within the standard, and install it to the back face side of the ring gear.



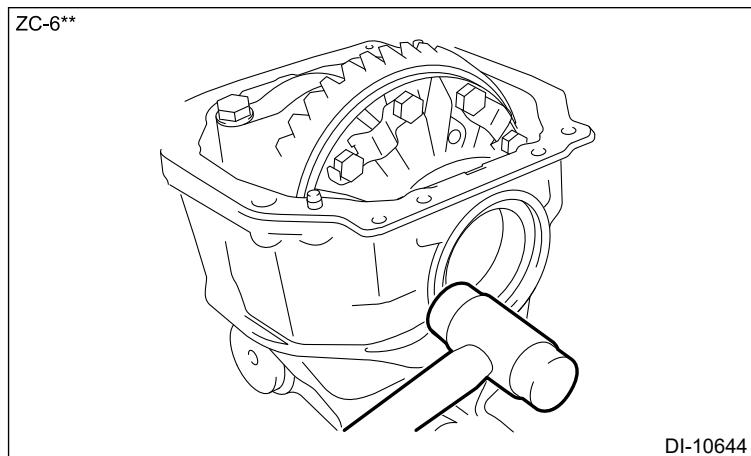
(6) Select the side gear shaft washer that provides the gap of 0 mm (0 in) or closest to 0 mm (0 in) between the end face of the case bearing (outer race) on the tooth face side of the ring gear and the differential carrier.



(A) Side gear shaft washer

(B) Case bearing (outer race)

- (7) Using a plastic hammer, lightly tap the differential carrier for better fitting of the case bearing and the side gear shaft washer.



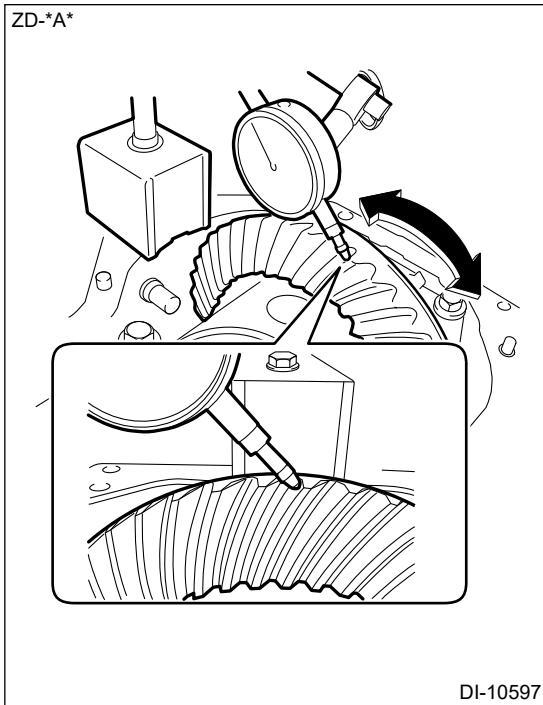
- (8) Using a magnet stand and dial gauge (spindle type), measure the backlash between the ring gear and drive pinion.

**Note:**

- **Measure at 3 points or more.**
- **Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.**
- **Secure the companion flange by hand and turn the differential case in the rotating direction.**
- **For reference for when selecting the side gear shaft washer, record the measured value.**
- **For reference for when selecting the side gear shaft washer, inspect the tooth contact between the ring gear and the drive pinion.**

**Specification:**

0.11 — 0.22 mm (0.004 — 0.009 in)



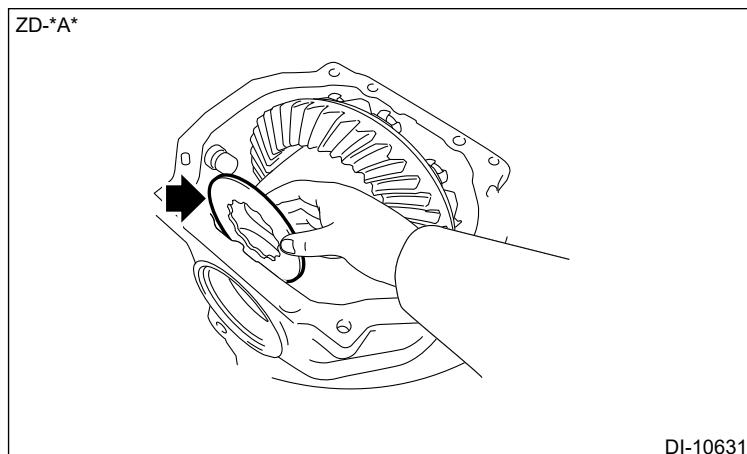
- (9) If the measured value is out of the standard, select the side gear shaft washer which allows the backlash to be within the standard.

**Note:**

**Adjust the side gear shaft washer on the tooth face side and the back face side of the ring gear by an even amount at a time.**

- 11.** Check and adjust the case bearing preload.

- (1) After adjusting the backlash of the ring gear, remove the side gear shaft washer on the tooth face side of the ring gear.



- (2) Using a micrometer, measure the thickness of the side gear shaft washer.
- (3) Select a side gear shaft washer that is 0.06 — 0.09 mm (0.002 — 0.004 in) thicker than the measured value.

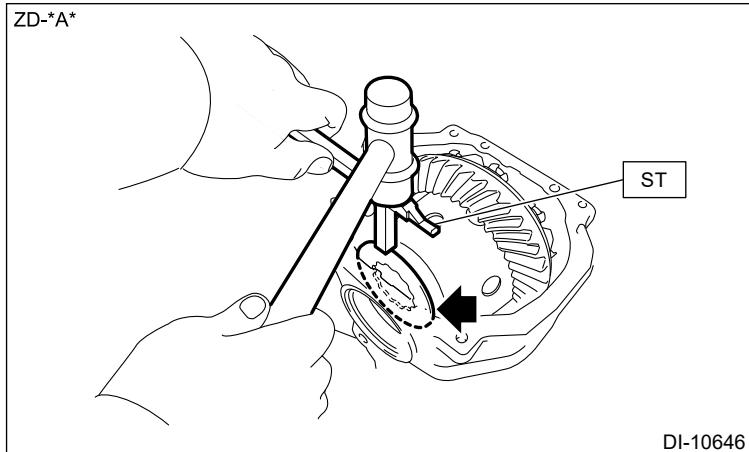
**Note:**

**Select a side gear shaft washer that can be inserted into about two thirds of the way by hand.**

- (4) Install the side gear shaft washer using the ST and a hammer.

**Preparation tool:**

ST: DIFFERENTIAL SIDE WASHER REMOVER AND REPLACER (09504-22012)



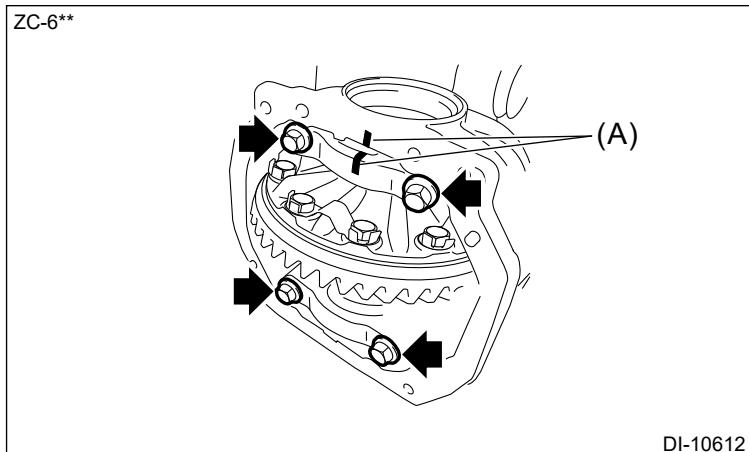
- (5) Align the identification marks (A) on the bearing cap and the differential carrier, and install the bearing cap.

**Caution:**

**The bearing cap and the differential carrier are manufactured as a unit; do not change the combination of the left and right sides.**

**Tightening torque:**

85 N·m (8.7 kgf-m, 62.7 ft-lb)



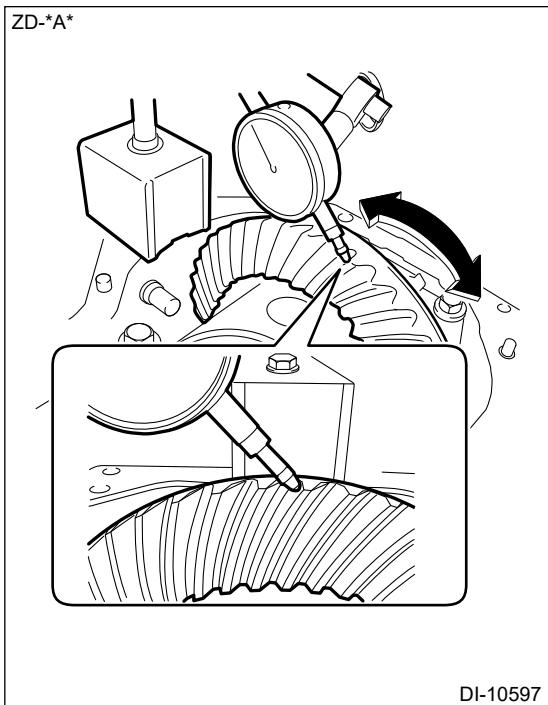
- (6) Using a magnet stand and dial gauge (spindle type), measure the backlash between the ring gear and drive pinion.

**Note:**

- Measure at 3 points or more.
- Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.
- Secure the companion flange by hand and turn the differential case in the rotating direction.
- For reference for when selecting the side gear shaft washer, record the measured value.
- For reference for when selecting the side gear shaft washer, inspect the tooth contact between the ring gear and the drive pinion.
- If any backlash does not reach the standard value, replace the side gear shaft washer on the tooth face side of the ring gear with a thicker one.
- When adjusting the backlash, bring the average value of the backlash close to 0.10 mm (0.004 in).

**Specification:**

0.11 — 0.22 mm (0.004 — 0.009 in)

**12. Inspect and adjust the overall preload.**

- (1) Using a torque wrench, check overall preload with the drive pinion contacting the ring gear tooth surface.

**Note:**

- If preload is out of the standard, replace the side gear shaft washer on the tooth face side of the ring gear and adjust the preload.
- If the preload does not reach the standard, replace the side gear shaft washer with a thicker one.
- If the preload exceeds the standard, replace the side gear shaft washer with a thinner one.
- For reference for when assembling, record the measured value.

- If the drive pinion tapered roller bearing is replaced with a new part

**Specification:**

If the case bearing is replaced with a new part: 2.17 — 2.77 N·m (0.22 — 0.28 kgf-m, 1.60 — 2.04 ft-lb)

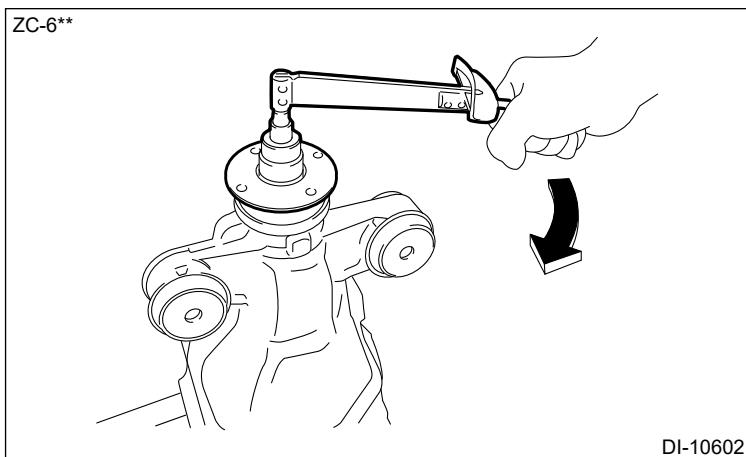
If the case bearing is reused: 2.09 — 2.67 N·m (0.21 — 0.27 kgf-m, 1.54 — 1.97 ft-lb)

- If the drive pinion tapered roller bearing is reused

**Specification:**

If the case bearing is replaced with a new part: 2.17 — 2.70 N·m (0.22 — 0.28 kgf-m, 1.60 — 1.99 ft-lb)

If the case bearing is reused: 2.09 — 2.60 N·m (0.21 — 0.27 kgf-m, 1.54 — 1.92 ft-lb)



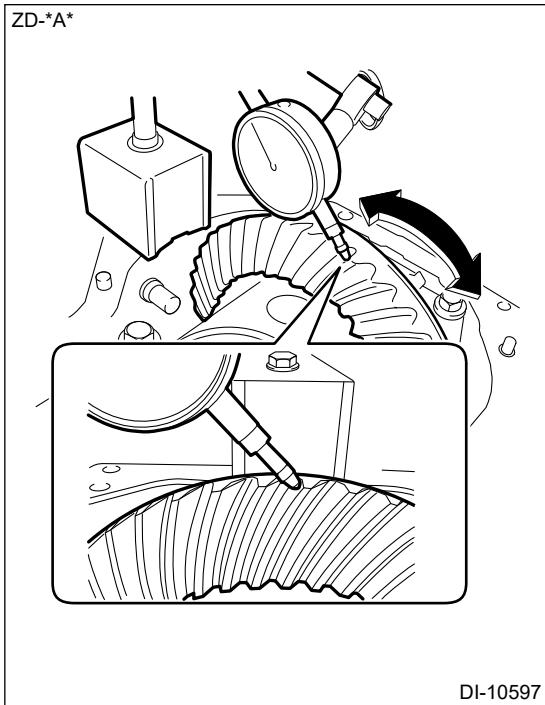
(2) Using a magnet stand and dial gauge (spindle type), measure the backlash between the ring gear and drive pinion.

**Note:**

- Measure at 3 points or more.
- Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.
- Secure the companion flange by hand and turn the differential case in the rotating direction.
- For reference for when selecting the side gear shaft washer, record the measured value.
- For reference for when selecting the side gear shaft washer, inspect the tooth contact between the ring gear and the drive pinion.
- If any backlash does not reach the standard value, replace the side gear shaft washer on the tooth face side of the ring gear with a thicker one.
- When adjusting the backlash, bring the average value of the backlash close to 0.10 mm (0.0039 in).

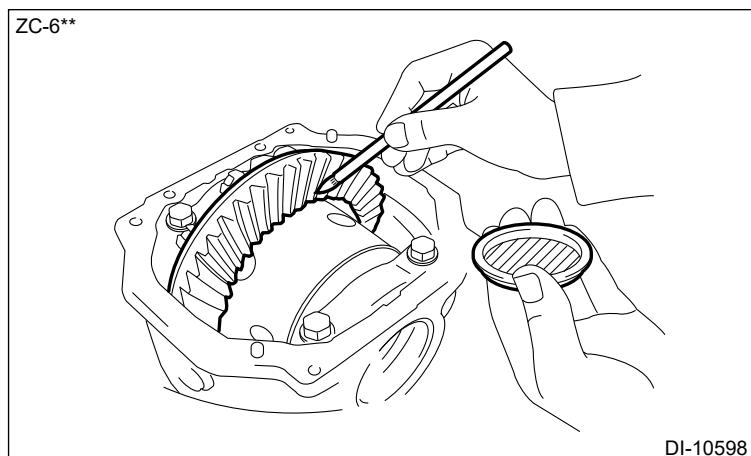
**Specification:**

0.11 — 0.22 mm (0.004 — 0.009 in)



**13.** Check the tooth contact pattern between the ring gear and the drive pinion.

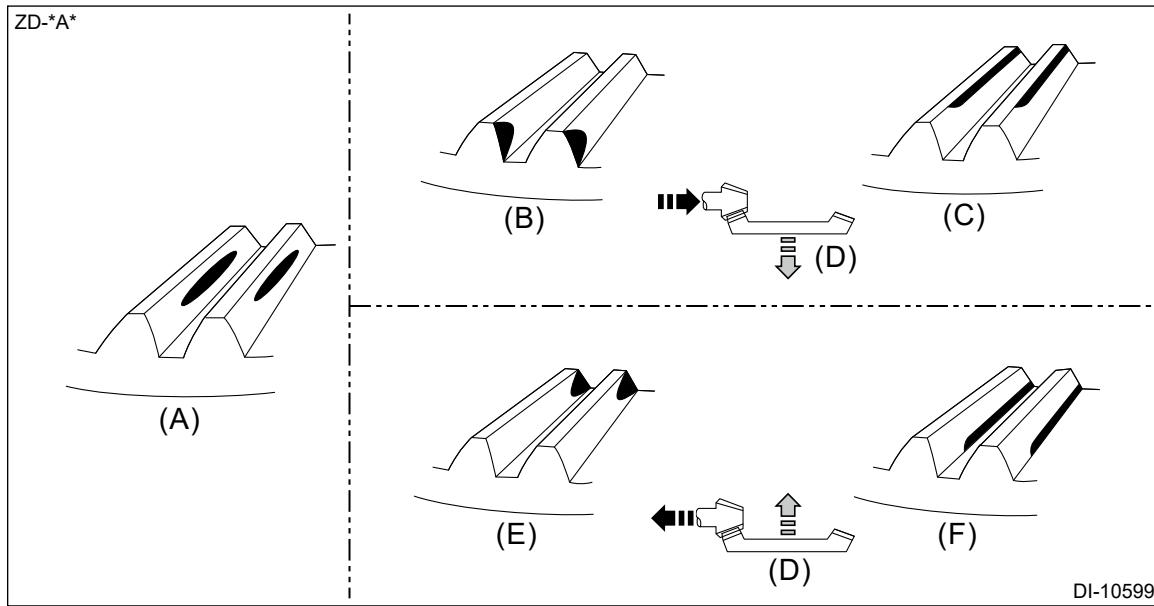
(1) Apply lead-free red dye evenly to the ring gear.



(2) Check the tooth contact by rotating the companion flange in the forward and backward directions until a definite contact pattern appears on the ring gear tooth face.

**Note:**

**Check at four points.**



- |                                   |   |                   |
|-----------------------------------|---|-------------------|
| (A) Correct tooth contact pattern | (C) Face contact  | (E) Toe contact   |
| (B) Heel contact                  | (D) Adjustment method: Adjust<br>the drive pinion and the ring<br>gear in the direction of arrow. | (F) Flank contact |

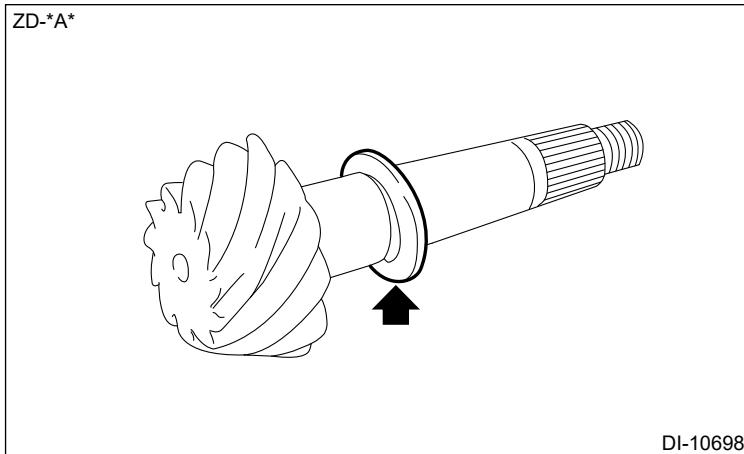
(3) If an improper tooth contact pattern occurs, remove the drive pinion tapered roller bearing RR (inner race), and select a drive pinion washer that provides a proper tooth contact pattern.

**Caution:**

**If the thickness of the drive pinion washer is changed, adjust the backlash and check overall preload.**

**Drive pinion washer type**

Thickness mm (in)	Thickness mm (in)
1.69 – 1.71 (0.0665 – 0.0673)	2.02 – 2.04 (0.0795 – 0.0803)
1.72 – 1.74 (0.0677 – 0.0685)	2.05 – 2.07 (0.0807 – 0.0815)
1.75 – 1.77 (0.0689 – 0.0697)	2.08 – 2.10 (0.0819 – 0.0827)
1.78 – 1.80 (0.0701 – 0.0709)	2.11 – 2.13 (0.0831 – 0.0839)
1.81 – 1.83 (0.0713 – 0.0720)	2.14 – 2.16 (0.0843 – 0.0850)
1.84 – 1.86 (0.0724 – 0.0732)	2.17 – 2.19 (0.0854 – 0.0862)
1.87 – 1.89 (0.0736 – 0.0744)	2.20 – 2.22 (0.0866 – 0.0874)
1.90 – 1.92 (0.0748 – 0.0756)	2.23 – 2.25 (0.0878 – 0.0886)
1.93 – 1.95 (0.0760 – 0.0768)	2.26 – 2.28 (0.0890 – 0.0898)
1.96 – 1.98 (0.0772 – 0.0780)	2.29 – 2.31 (0.0902 – 0.0909)
1.99 – 2.01 (0.0783 – 0.0791)	2.32 – 2.34 (0.0913 – 0.0921)



- 14.** Using ST1 and ST2, secure the companion flange and remove the drive pinion nut.

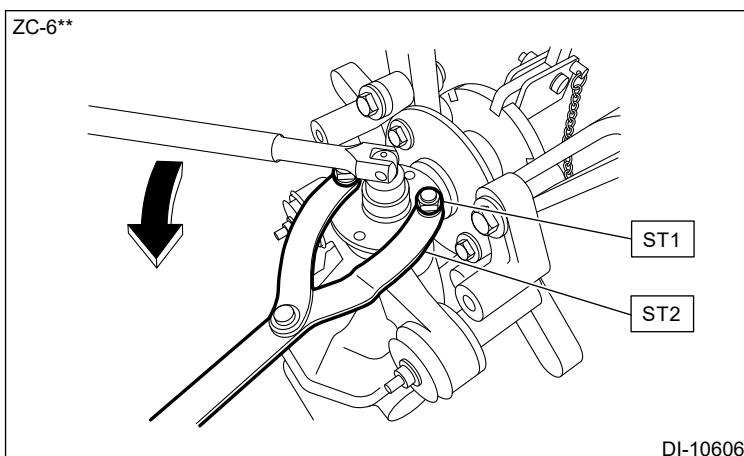
**Caution:**

**During operation, support the engine stand.**

**Preparation tool:**

ST1: PULLEY WRENCH PIN SET (18334AA030)

ST2: PULLEY WRENCH (18355AA000)

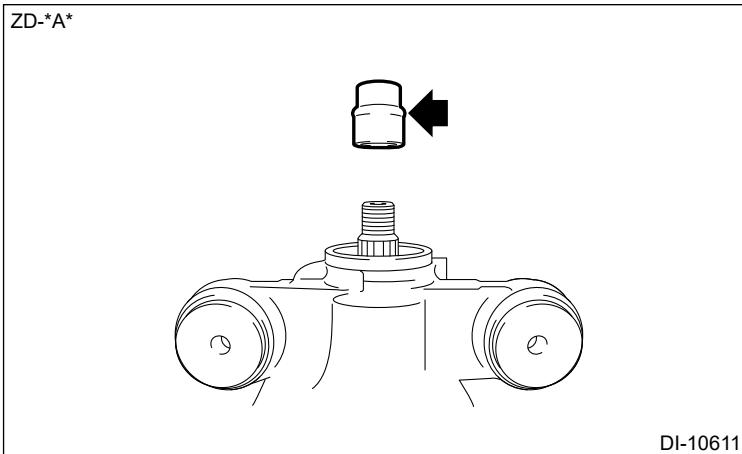


- 15.** Remove the companion flange, the drive pinion oil slinger, and the drive pinion tapered roller bearing FR. [Ref. to DIFFERENTIALS>Rear Differential>DISASSEMBLY.](#)

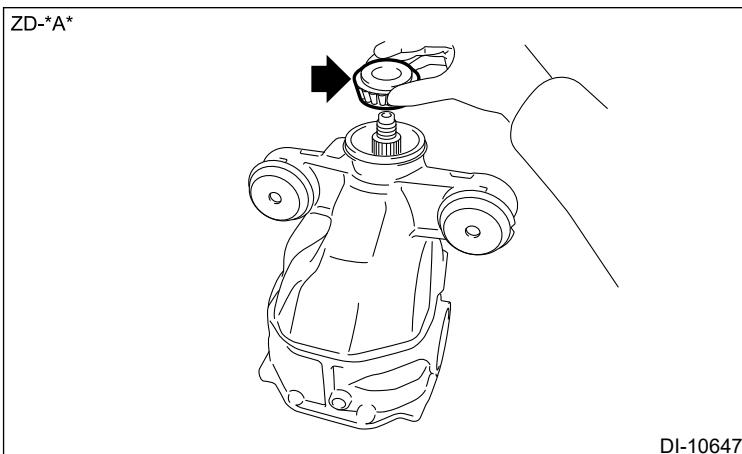
- 16.** Install a new drive pinion bearing spacer.

**Note:**

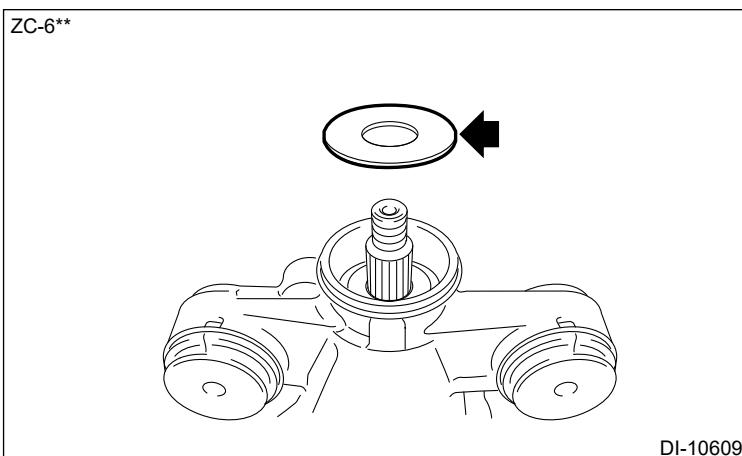
**Install it with its larger inner diameter end facing the drive pinion.**



**17.** Set the drive pinion tapered roller bearing FR (inner race) on the differential carrier.



**18.** Install the drive pinion oil slinger to the differential carrier.



**19.** Using ST1, ST2, ST3, ST4, ST5 and the companion flange, install the drive pinion tapered roller bearing RR (inner race).

**Caution:**

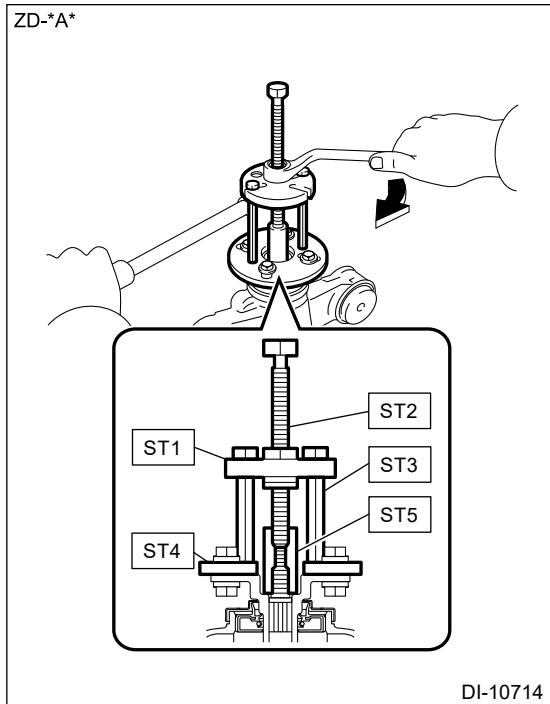
**Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

- ST1: UPPER PLATE (09951-03010)
- ST2: CENTER BOLT (09953-03010)
- ST3: ARM (09954-03010)
- ST4: LOWER PLATE 130 (09955-03030)
- ST5: ADAPTER 20 (09956-03030)



**20.** Remove the companion flange and install a new rear differential carrier oil seal. [Ref. to DIFFERENTIALS>Rear Differential Carrier Oil Seal>REPLACEMENT.](#)

**21.** Install the companion flange and adjust the drive pinion preload.

(1) Install the companion flange to the differential carrier using ST1, ST2, ST3, ST4, and ST5.

**Caution:**

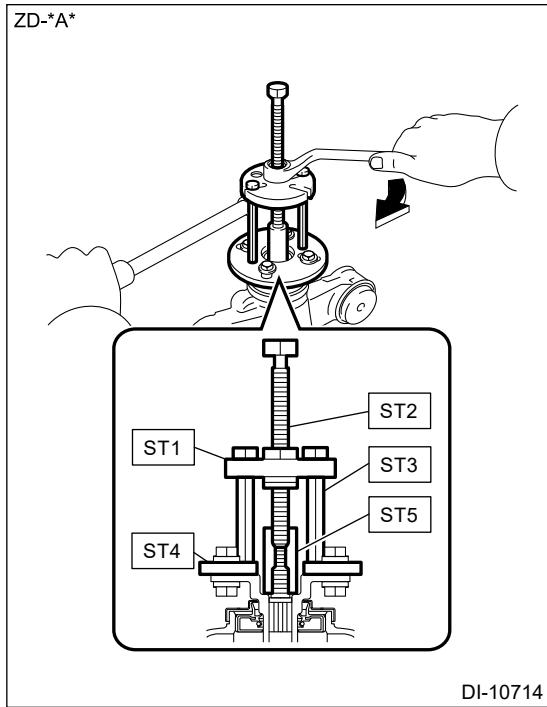
**Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

- ST1: UPPER PLATE (09951-03010)
- ST2: CENTER BOLT (09953-03010)
- ST3: ARM (09954-03010)
- ST4: LOWER PLATE 130 (09955-03030)
- ST5: ADAPTER 20 (09956-03030)



(2) Using ST1 and ST2, secure the companion flange and tighten the drive pinion nut.

**Caution:**

**During operation, support the engine stand.**

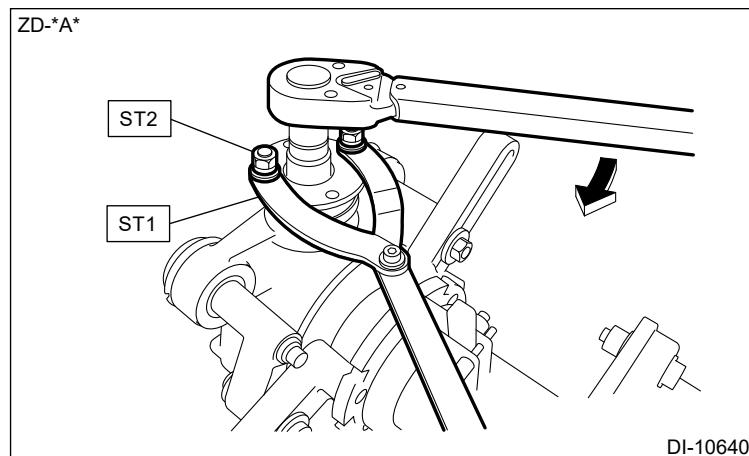
**Preparation tool:**

ST1: PULLEY WRENCH (18355AA000)

ST2: PULLEY WRENCH PIN SET (18334AA030)

**Tightening torque:**

100 N·m (10.2 kgf-m, 73.8 ft-lb)



(3) Turn the companion flange several times to smooth the bearing.

(4) Using a torque wrench, gradually tighten the drive pinion nut so that the drive pinion preload is within the specified range.

**Caution:**

**Immediately stop tightening if the preload is still insufficient after the tightening torque exceeds the limit.**

**Note:**

- Check preload within the backlash of the drive pinion and ring gear.
- Apply differential gear oil to the thread.
- For reference for when checking the overall preload, record the measured value.

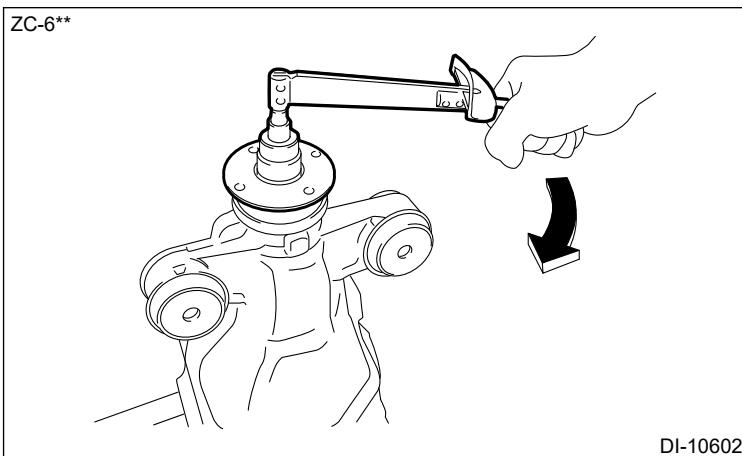
**Specification:**

If the drive pinion tapered roller bearing is replaced with a new part: 1.87 — 2.24 N·m (0.19 — 0.23 kgf-m, 1.38 — 1.65 ft-lb)

If the drive pinion tapered roller bearing is reused: 1.87 — 2.17 N·m (0.19 — 0.22 kgf-m, 1.38 — 1.60 ft-lb)

**Service limit:**

338 N·m (34.5 kgf-m, 249.3 ft-lb)



(5) Replace the drive pinion bearing spacer with a new part if preload is excessively high.

**Caution:**

**The bearing spacer is used in plastic deformation, therefore, always replace the drive pinion bearing spacer with a new part if excessively high preload is set by mistake.**

(6) If the preload is insufficient, check the preload after tightening the drive pinion nut by 5 — 10 °, and adjust the preload to be within the standard.

**Caution:**

**Be careful so that the tightening torque does not exceed the limit.**

**Service limit:**

338 N·m (34.5 kgf-m, 249.3 ft-lb)

(7) If the preload is still insufficient after the tightening torque of the drive pinion nut exceeds the limit, check that the drive pinion nut and drive pinion thread are not damaged.

**Note:**

**When no fault is found, replace the drive pinion bearing spacer with a new part, apply differential gear oil to the thread of the drive pinion, and repeat the procedure from step (2).**

**22.** Using a torque wrench, check overall preload with the drive pinion contacting the ring gear tooth surface.

- If the drive pinion tapered roller bearing is replaced with a new part

**Specification:**

If the case bearing is replaced with a new part: 2.27 — 2.87 N·m (0.23 — 0.29 kgf-m, 1.67 — 2.12 ft-lb)

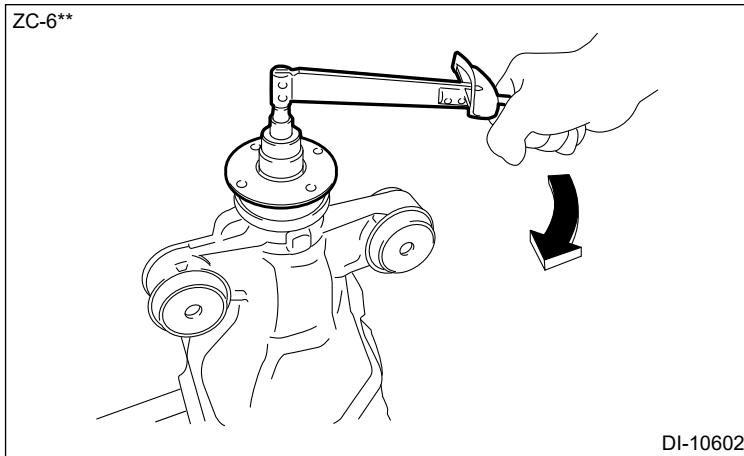
If the case bearing is reused: 2.19 — 2.77 N·m (0.22 — 0.28 kgf-m, 1.62 — 2.04 ft-lb)

- If the drive pinion tapered roller bearing is reused

**Specification:**

If the case bearing is replaced with a new part: 2.27 — 2.80 N·m (0.23 — 0.29 kgf-m, 1.67 — 2.07 ft-lb)

If the case bearing is reused: 2.19 — 2.70 N·m (0.22 — 0.28 kgf-m, 1.62 — 1.99 ft-lb)



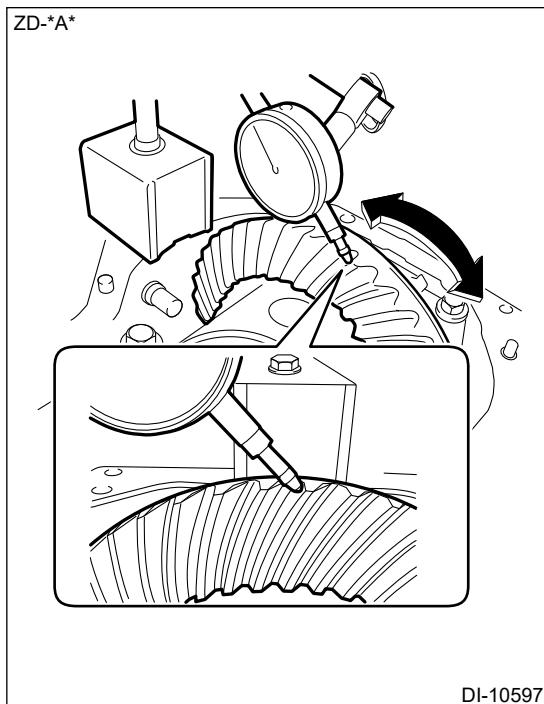
- 23.** Using a magnet stand and dial gauge (spindle type), check the backlash between the ring gear and drive pinion.

**Note:**

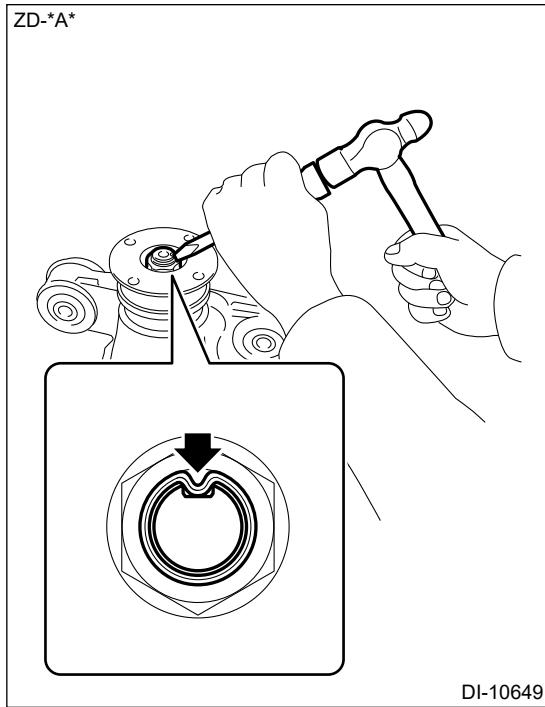
- Contact a dial gauge (spindle type) at a right angle to the tooth surface end of the ring gear.
- Secure the companion flange by hand and turn the differential case in the rotating direction.
- Check at three points or more.

**Specification:**

0.11 — 0.22 mm (0.004 — 0.009 in)



- 24.** Check the companion flange runout.  Ref. to DIFFERENTIALS>Rear Differential>INSPECTION.  
**25.** Crimp the drive pinion nut.



- 26.** Install the rear differential side gear shaft oil seal.  Ref. to DIFFERENTIALS>Rear Differential Side Gear Shaft Oil Seal>REPLACEMENT.  
**27.** Install the drain plug using a new gasket.

**Tightening torque:**

49 N·m (5.0 kgf-m, 36.1 ft-lb)

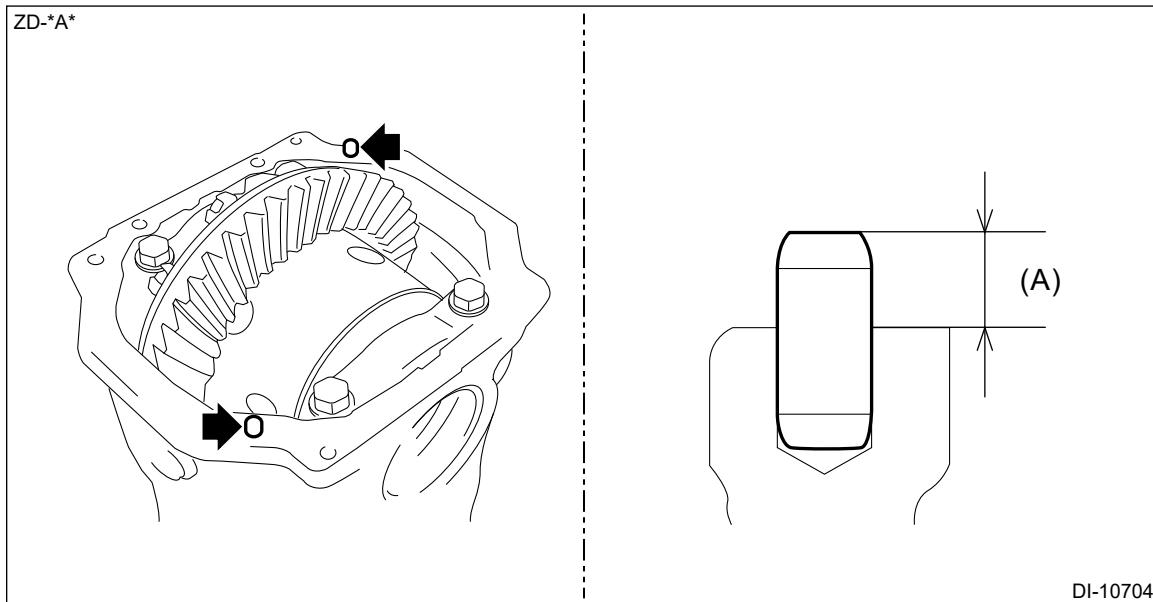
- 28.** Check the projection (A) of the straight pins.

**Note:**

If installed on the differential carrier cover side, install them on the differential carrier.

**Specification:**

8.0 — 9.0 mm (0.31 — 0.35 in)



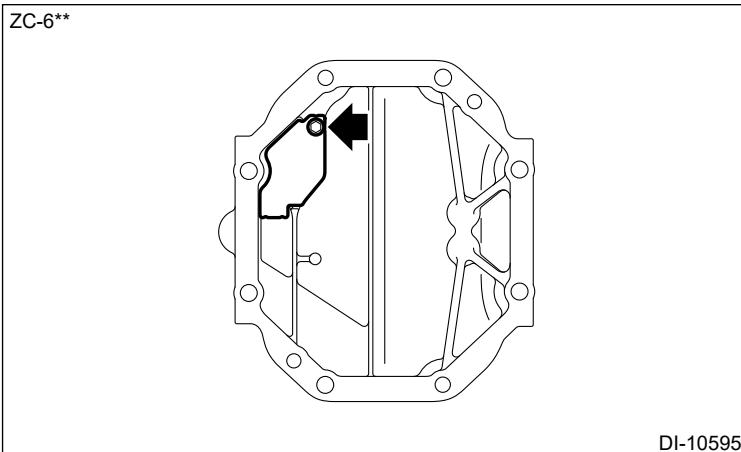
**29.** Install the breather plug oil deflector to the differential carrier cover.

**Caution:**

**Be careful not to damage the mating surface of the differential carrier cover.**

**Tightening torque:**

8 N·m (0.8 kgf-m, 5.9 ft-lb)



**30.** Install the differential carrier cover.

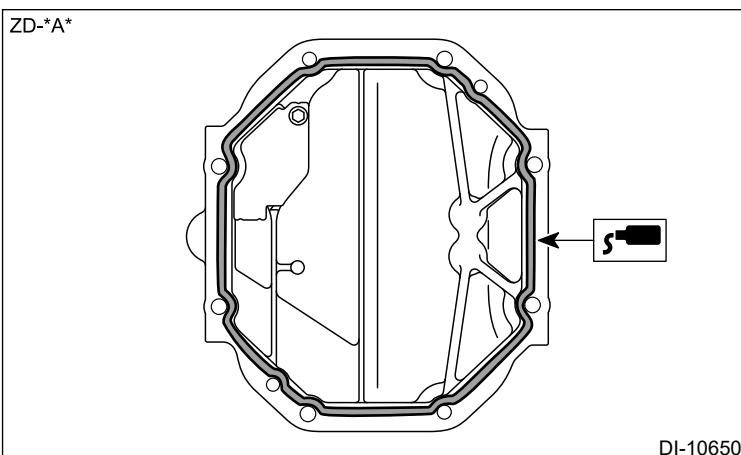
- (1) Apply liquid gasket to the mating surface of the differential carrier cover as shown in the figure, and temporarily install the differential carrier cover.

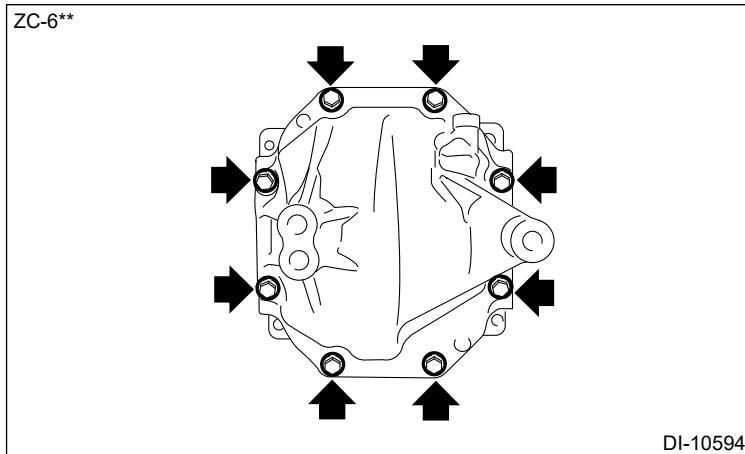
**Note:**

- **Apply a 2.0 – 3.0 mm (0.08 – 0.12 in) bead of liquid gasket, and overlap the start and end of the bead by 10.0 mm (0.39 in) or more.**
- **Before applying liquid gasket, degrease the liquid gasket seal surface of the differential carrier and the differential carrier cover.**
- **Install within 3 min. after applying liquid gasket.**

**Preparation items:**

Liquid gasket: THREE BOND 1281 or equivalent





(2) Tighten the bolts that hold the differential carrier cover.

**Caution:**

**Fill the differential gear oil after one hour or more have elapsed after installing the differential carrier cover. Do not accelerate or decelerate suddenly until 12 hours or more have elapsed.**

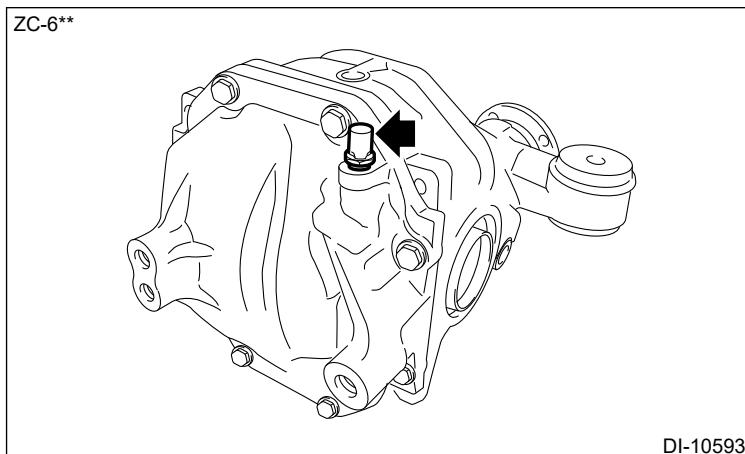
**Tightening torque:**

47 N·m (4.8 kgf-m, 34.7 ft-lb)

**31.** Install the rear differential breather plug to the differential carrier.

**Tightening torque:**

21 N·m (2.1 kgf-m, 15.5 ft-lb)



**32.** Remove the rear differential from the engine stand, etc.

## DIFFERENTIALS > Rear Differential

### INSPECTION

**Note:**

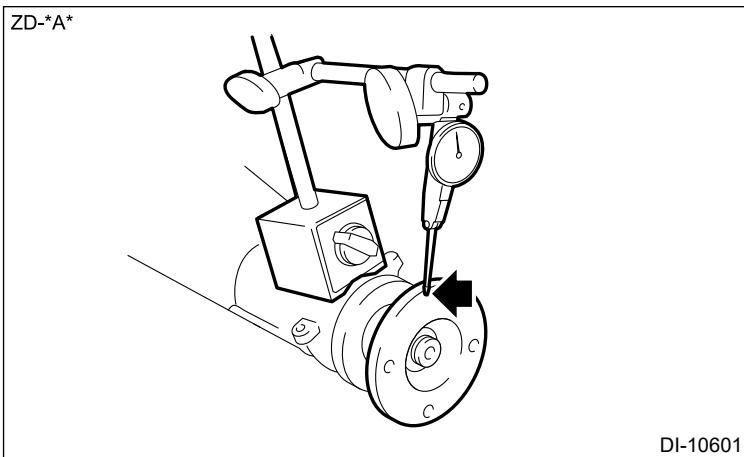
For backlash and tooth contact of the final gear set, refer to "ASSEMBLY". [Ref. to DIFFERENTIALS>Rear Differential>ASSEMBLY.](#)

1. Check for oil leaks.
2. Check that there is no deformation, cracks or other damages.
3. Check each part for excessive wear.

- 4.** Check the differential carrier and companion flange for excessive rust.
- 5.** Check the companion flange runout.
  - (1) Remove the foreign matter and rust completely from the companion flange.
  - (2) Measure the runout of the companion flange mating surface using a magnet stand and dial gauge (lever type).

**Service limit:**

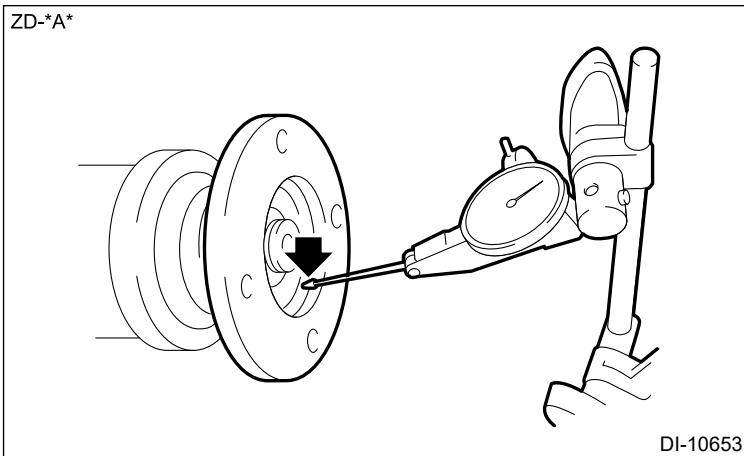
0.09 mm (0.004 in)



- (3) Measure the runout inside the companion flange using a magnet stand and dial gauge (lever type).

**Service limit:**

0.09 mm (0.004 in)



- (4) If either runout exceeds the limit, move the phase of companion flange and drive pinion by 90° each, and find the point where the runout is within the limit.

**Note:**

- **If the runout exceeds the limit after changing the phase, replace the companion flange and recheck the runout.**
- **If the runout exceeds the limit after replacing the companion flange, the drive pinion or the drive pinion tapered roller bearing may be defective.**

## DIFFERENTIALS > Rear Differential Carrier Oil Seal REPLACEMENT

**Note:**

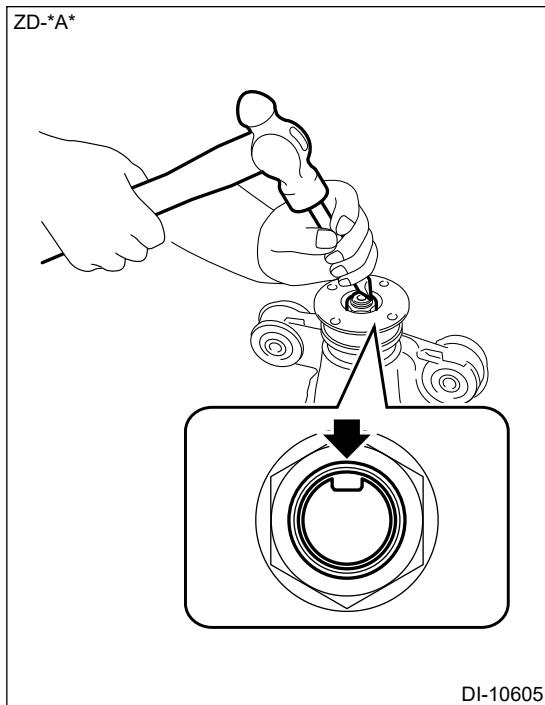
**When replacing the rear differential carrier oil seal, always replace the drive pinion spacer with a new part and adjust the drive pinion preload.**

1. Release the parking brake.
2. Release the shift lock and shift the select lever to the "N range". (AT model)  Ref. to CONTROL SYSTEMS>Select Lever>REMOVAL.
3. Drain differential gear oil.  Ref. to DIFFERENTIALS>Differential Gear Oil>REPLACEMENT.
4. Remove the rear differential.  Ref. to DIFFERENTIALS>Rear Differential>REMOVAL.
5. Secure the rear differential to the engine stand, etc.
6. Remove the companion flange.

(1) Lift the crimped section of the drive pinion nut.

**Caution:**

**Fully lift the crimped section to prevent the thread damage.**



(2) Using ST1 and ST2, secure the companion flange to remove the drive pinion nut.

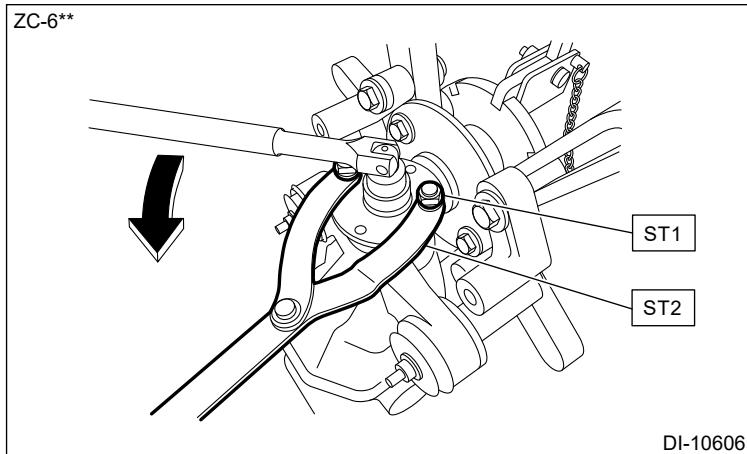
**Caution:**

**During operation, support the engine stand.**

**Preparation tool:**

ST1: PULLEY WRENCH PIN SET (18334AA030)

ST2: PULLEY WRENCH (18355AA000)



(3) Remove the companion flange using ST1, ST2, ST3, ST4, and ST5.

**Caution:**

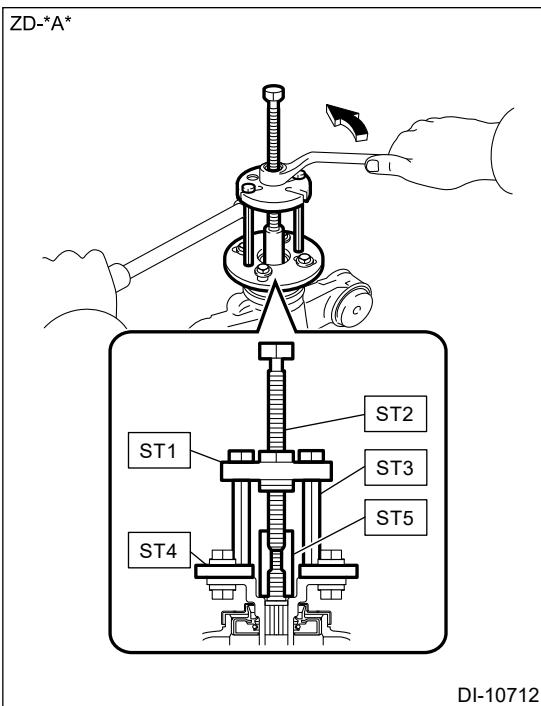
**Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

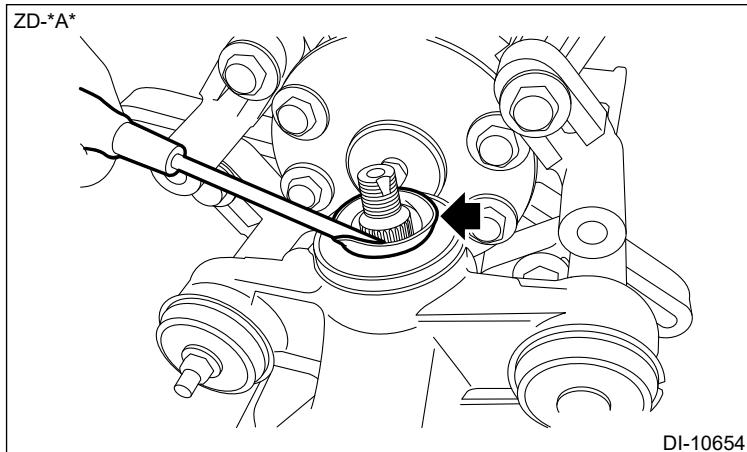
**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

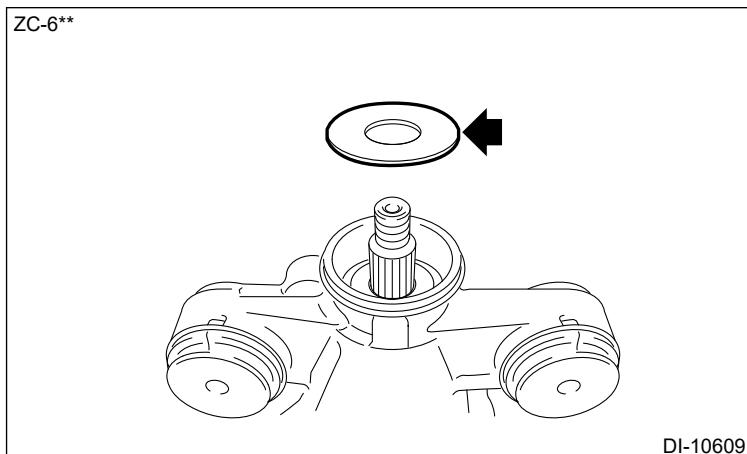
ST1: UPPER PLATE (09951-03010)  
 ST2: CENTER BOLT (09953-03010)  
 ST3: ARM (09954-03010)  
 ST4: LOWER PLATE 130 (09955-03030)  
 ST5: ADAPTER 20 (09956-03030)



7. Remove the rear differential carrier oil seal using a flat tip screwdriver wrapped with protection tape, etc.



8. Remove the drive pinion oil slinger.



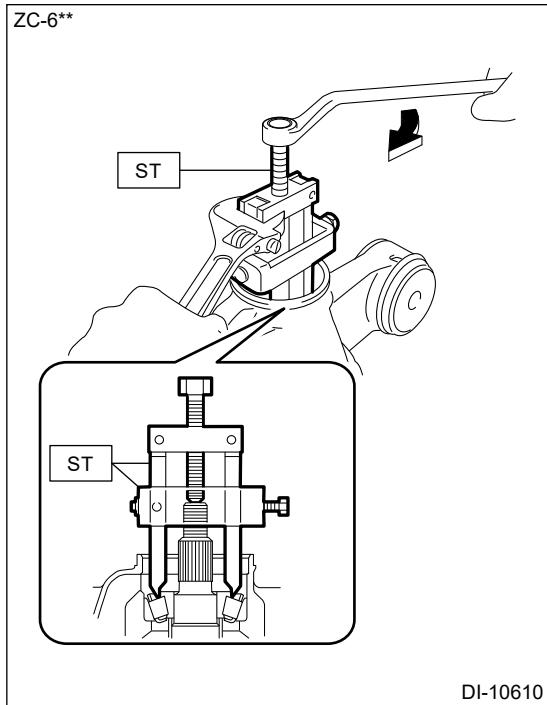
9. Remove the drive pinion tapered roller bearing FR (inner race) using the ST.

**Caution:**

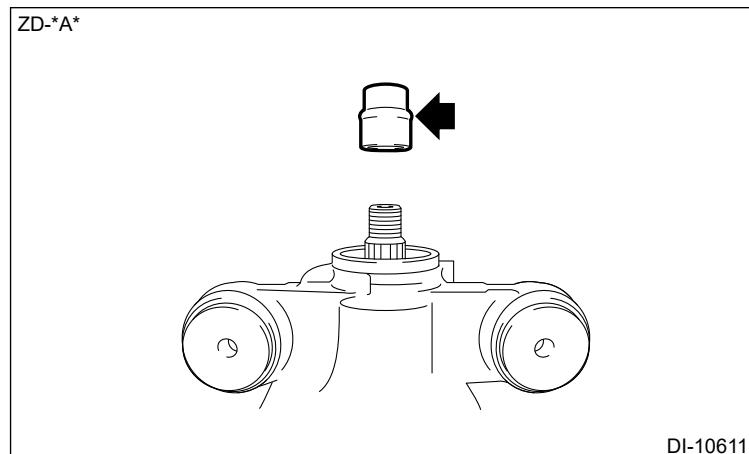
**Apply the molybdenum grease on the thread and the threaded end of the ST before use.**

**Preparation tool:**

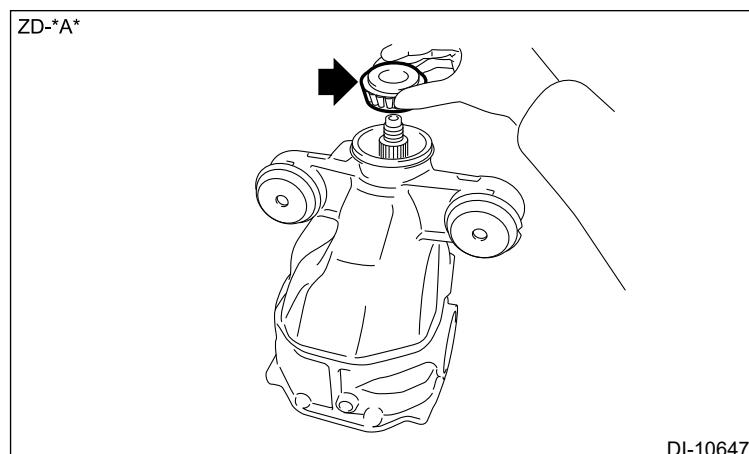
ST: DRIVE PINION FRONT BEARING REMOVER (09556-22010)



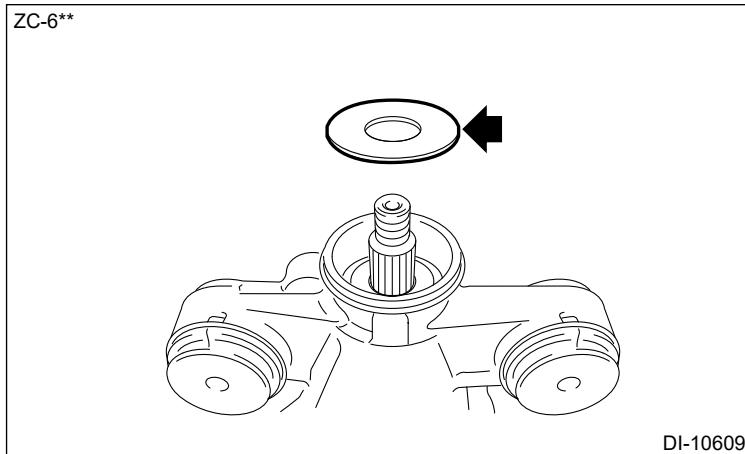
**10.** Replace the drive pinion bearing spacer with a new part.



**11.** Set the drive pinion tapered roller bearing FR (inner race).



**12.** Install the drive pinion oil slinger.



- 13.** Using ST1, ST2, ST3, ST4, ST5 and the companion flange, press-fit the drive pinion tapered roller bearing FR (inner race).

**Caution:**

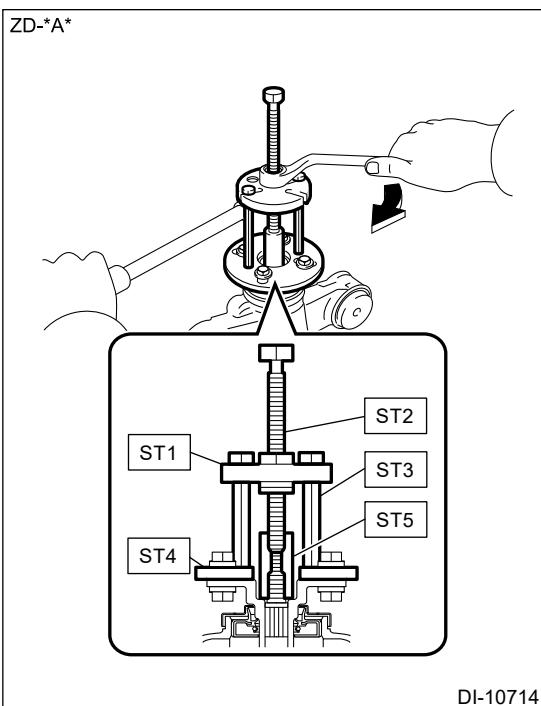
**Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

ST1: UPPER PLATE (09951-03010)  
 ST2: CENTER BOLT (09953-03010)  
 ST3: ARM (09954-03010)  
 ST4: LOWER PLATE 130 (09955-03030)  
 ST5: ADAPTER 20 (09956-03030)



- 14.** Install the rear differential carrier oil seal.

(1) Install a new rear differential carrier oil seal using the ST.

**Note:**

**After installation, measure the height from the rear differential carrier oil seal to the end face of the differential carrier at 3 points or more and check that the difference between the maximum and minimum values is 0.65 mm (0.026 in) or less.**

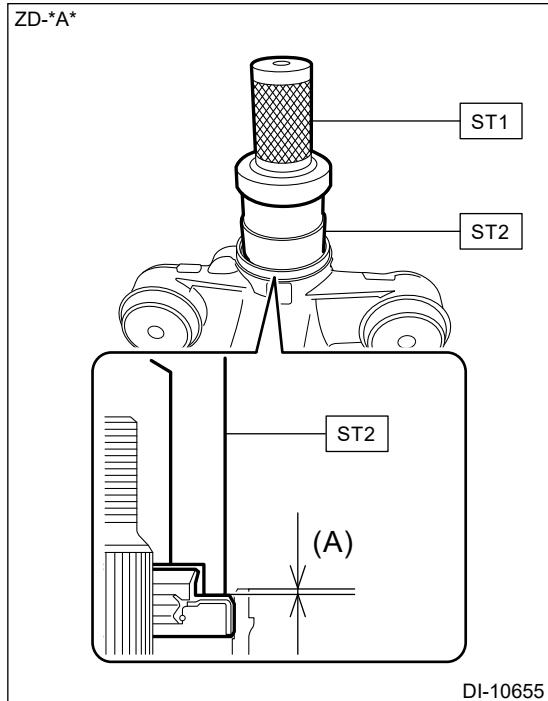
**Preparation tool:**

ST1: INSTALLER (498447120)

ST2: PRESS SNAP RING (499755502)

**Insertion depth from the end surface of the differential carrier:**

$2.0 \pm 0.45$  mm (0.08±0.018 in)



(A)  $2.0 \pm 0.45$  mm  
(0.08±0.018 in)

(2) Apply the differential gear oil to the rear differential carrier oil seal lip.

**15. Adjust the drive pinion preload.**

(1) Install the companion flange to the differential carrier using ST1, ST2, ST3, ST4, and ST5.

**Caution:**

**Apply the molybdenum grease on the thread and the threaded end of the ST2 before use.**

**Note:**

**Use bolts and nuts with M8 × P1.25 and a bolt length of approx. 40 mm for securing ST4 and the companion flange.**

**Preparation tool:**

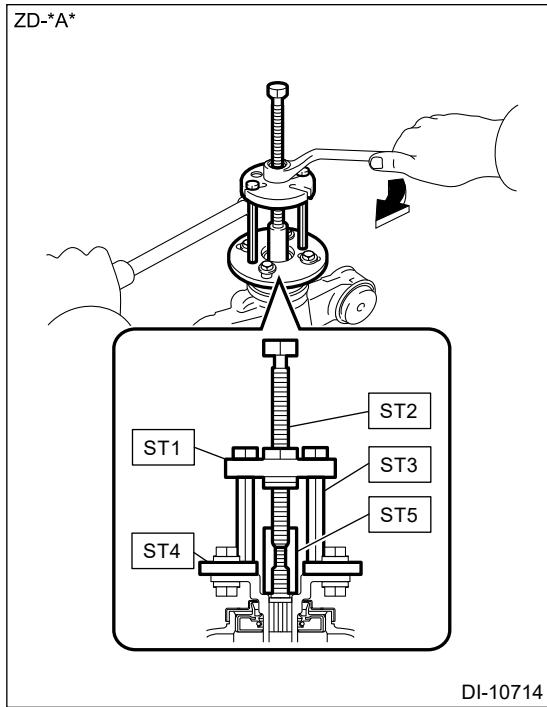
ST1: UPPER PLATE (09951-03010)

ST2: CENTER BOLT (09953-03010)

ST3: ARM (09954-03010)

ST4: LOWER PLATE 130 (09955-03030)

ST5: ADAPTER 20 (09956-03030)



(2) Using ST1 and ST2, secure the companion flange and tighten the drive pinion nut.

**Caution:**

**During operation, support the engine stand.**

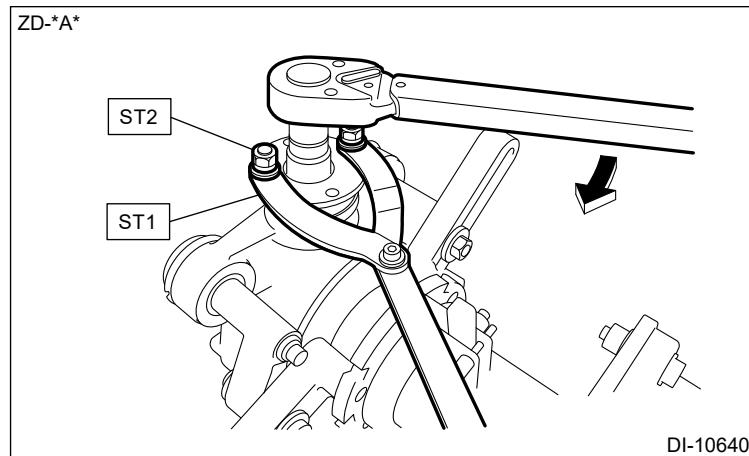
**Preparation tool:**

ST1: PULLEY WRENCH (18355AA000)

ST2: PULLEY WRENCH PIN SET (18334AA030)

**Tightening torque:**

100 N·m (10.2 kgf-m, 73.8 ft-lb)



(3) Turn the companion flange several times to smooth the bearing.

(4) Using a torque wrench, gradually tighten the drive pinion nut so that the drive pinion preload is within the standard.

**Caution:**

**Immediately stop tightening if the preload is still insufficient after the tightening torque exceeds the limit.**

**Note:**

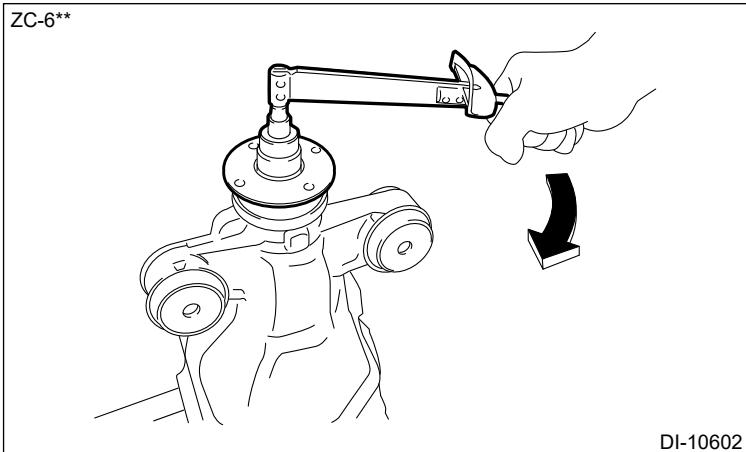
- Check preload within the backlash of the drive pinion and ring gear.
- Apply differential gear oil to the threaded portion of the drive pinion.
- For reference for when checking the overall preload, record the measured value.

**Specification:**

1.87 — 2.17 N·m (0.19 — 0.22 kgf-m, 1.38 — 1.60 ft-lb)

**Service limit:**

338 N·m (34.5 kgf-m, 249.3 ft-lb)



(5) Replace the drive pinion bearing spacer with a new part if preload is excessively high.

**Caution:**

**Always replace the bearing spacer with a new part if excessively high preload is set by mistake.**

(6) If the preload is insufficient, check the preload after tightening the drive pinion nut by 5 — 10 °, and adjust the preload to be within the standard.

**Caution:**

**Be careful so that the tightening torque does not exceed the limit.**

**Service limit:**

338 N·m (34.5 kgf-m, 249.3 ft-lb)

(7) If the preload is still insufficient after the tightening torque of the drive pinion nut exceeds the limit, check that the drive pinion nut and drive pinion thread are not damaged.

**Note:**

**When no fault is found, replace the drive pinion bearing spacer with a new part, apply differential gear oil to the thread of the drive pinion, and repeat the procedure from step (2).**

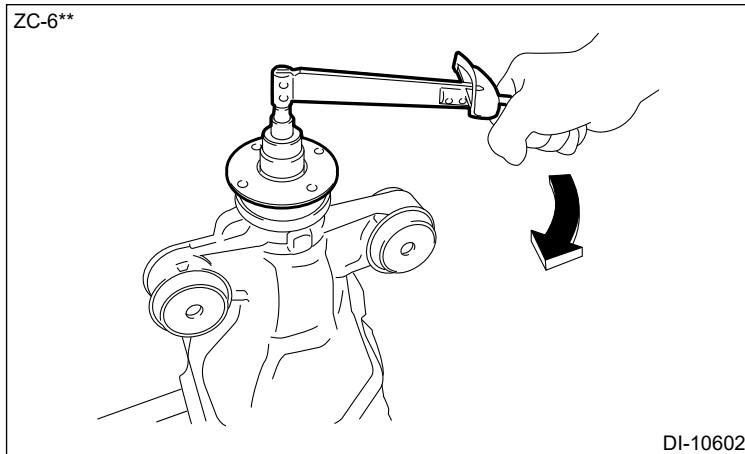
**16.** Using a torque wrench, check overall preload with the drive pinion contacting the ring gear tooth surface.

**Caution:**

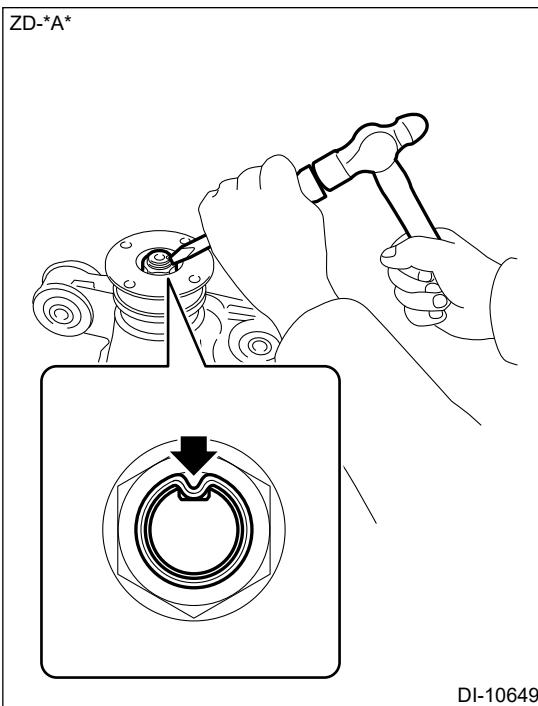
**When the drive pinion tapered roller bearing and the case bearing are replaced with new parts, refer to "ASSEMBLY" in "Rear Differential" section. [Ref. to DIFFERENTIALS>Rear Differential>ASSEMBLY.](#)**

**Specification:**

2.19 — 2.70 N·m (0.22 — 0.28 kgf-m, 1.62 — 1.99 ft-lb)



**17.** Crimp the drive pinion nut.



**18.** Remove the rear differential from the engine stand, etc.

**19.** Install the rear differential. [Ref. to DIFFERENTIALS > Rear Differential > INSTALLATION.](#)

**20.** Fill differential gear oil. [Ref. to DIFFERENTIALS > Differential Gear Oil > REPLACEMENT.](#)

**21.** Release the shift lock and shift the select lever to the "P range". (AT model) [Ref. to CONTROL SYSTEMS > Select Lever > INSTALLATION.](#)

**22.** Apply the parking brake.

## DIFFERENTIALS > Rear Differential Carrier Oil Seal

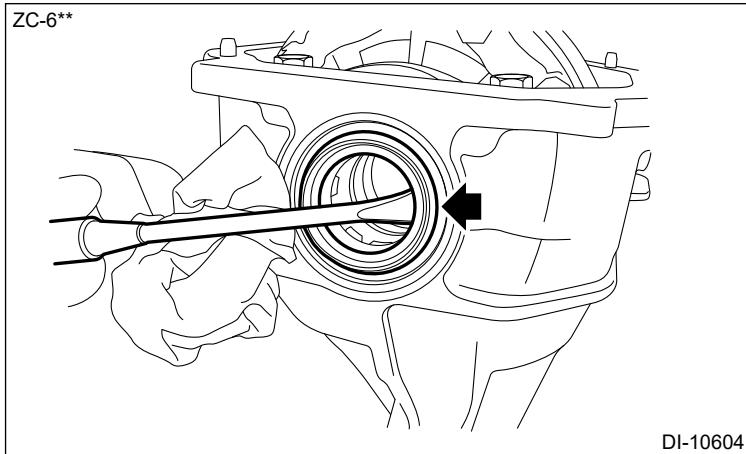
### INSPECTION

- 1.** Check for oil leaks.
- 2.** Check that there is no deformation, cracks or other damages.

## DIFFERENTIALS > Rear Differential Side Gear Shaft Oil Seal

### REPLACEMENT

1. Release the parking brake.
2. Release the shift lock and shift the select lever to the "N range". (AT model)  [Ref. to CONTROL SYSTEMS>Select Lever>REMOVAL.](#)
3. Drain differential gear oil.  [Ref. to DIFFERENTIALS>Differential Gear Oil>REPLACEMENT.](#)
4. Remove the rear differential.  [Ref. to DIFFERENTIALS>Rear Differential>REMOVAL.](#)
5. Remove the rear differential side gear shaft oil seal using a flat tip screwdriver wrapped with protection tape, etc.



6. Install a new rear differential side gear shaft oil seal using the ST.

**Note:**

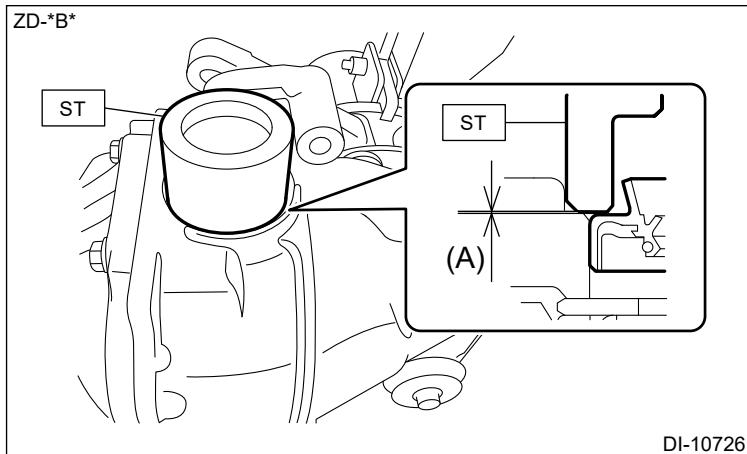
- **Install it by evenly tap the entire perimeter.**
- **Apply the differential gear oil to the rear differential side gear shaft oil seal lip.**

**Preparation tool:**

ST: BASE (20299AG010)

**Insertion depth from the end surface of the differential carrier:**

$0\pm0.5$  mm ( $0\pm0.02$  in)



(A)  $0\pm0.5$  mm ( $0\pm0.02$  in)

7. Install the rear differential. [Ref. to DIFFERENTIALS>Rear Differential>INSTALLATION.](#)
8. Fill differential gear oil. [Ref. to DIFFERENTIALS>Differential Gear Oil>REPLACEMENT.](#)
9. Release the shift lock and shift the select lever to the "P range". (AT model) [Ref. to CONTROL SYSTEMS>Select Lever>INSTALLATION.](#)
10. Apply the parking brake.

## DIFFERENTIALS > Rear Differential Side Gear Shaft Oil Seal

### INSPECTION

1. Check for oil leaks.
2. Check that there is no deformation, cracks or other damages.

## DIFFERENTIALS > Rear Differential Mount Bushing

### REPLACEMENT

#### 1. REAR DIFFERENTIAL MOUNT BUSHING LH

**Caution:**

**Be sure to remove dirt and rust before work.**

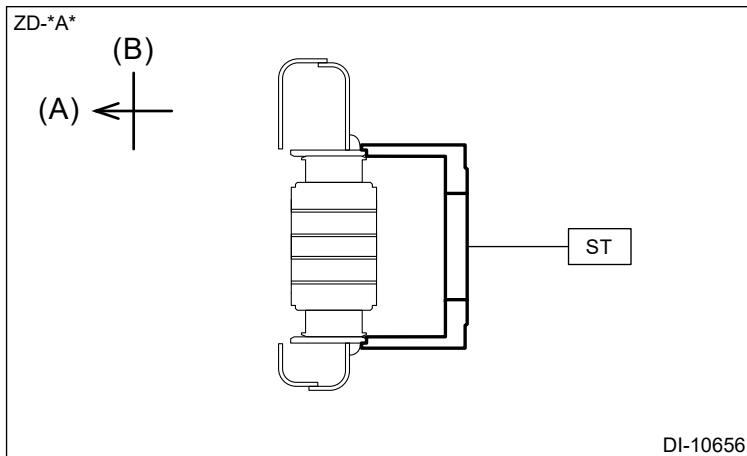
1. Remove the rear differential.  [Ref. to DIFFERENTIALS>Rear Differential>REMOVAL.](#)
2. Fit the ST to the periphery of the sub frame assembly rear, and make sure that the ST does not contact with excessive welds or spatters.

**Caution:**

**If the ST rises on excessive welds or spatters, the ST may be damaged during the operation. To avoid this, grind the excessive welds or spatters with a sander or equivalent so that the ST contacts the periphery of the cylinder.**

**Preparation tool:**

ST: SPECIAL TOOL B (41399CA070)



(A) Front side

(B) Upside

3. Set the ST1, ST2, ST3, ST4, ST5 and ST6 as shown in the figure.

**Caution:**

**Apply the molybdenum grease on the thread of the ST.**

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399CA150)

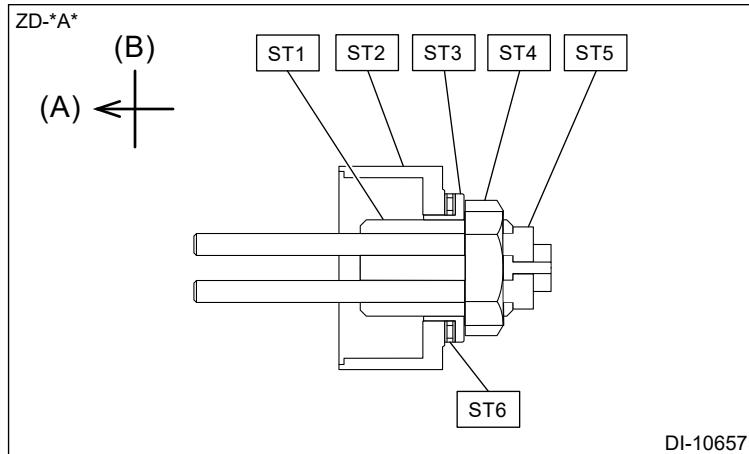
ST2: SPECIAL TOOL B (41399CA070)

ST3: SPECIAL TOOL SLEEVE (41399CA100)

ST4: SPECIAL TOOL NUT (41399CA120)

ST5: SPECIAL TOOL BOLT (41399CA140)

ST6: SPECIAL TOOL BEARING (41399CA130)

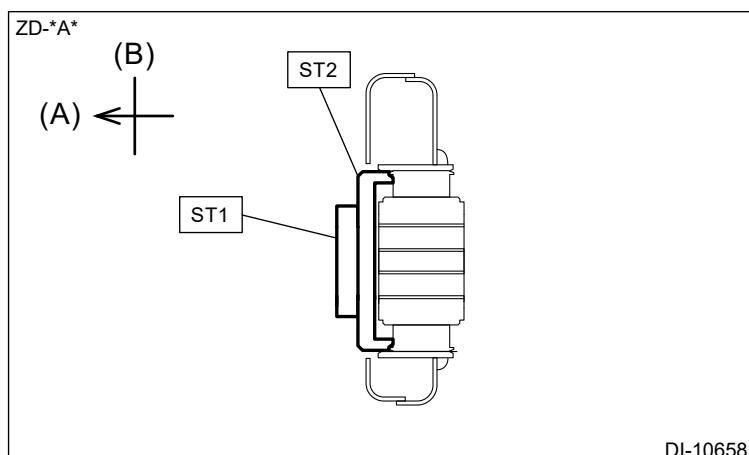


4. Set the ST1 and ST2 in the front side of the rear differential mount bushing LH, and hold them.

**Preparation tool:**

ST1: SPECIAL TOOL PLATE (41399CA110)

ST2: SPECIAL TOOL A (41399CA060)

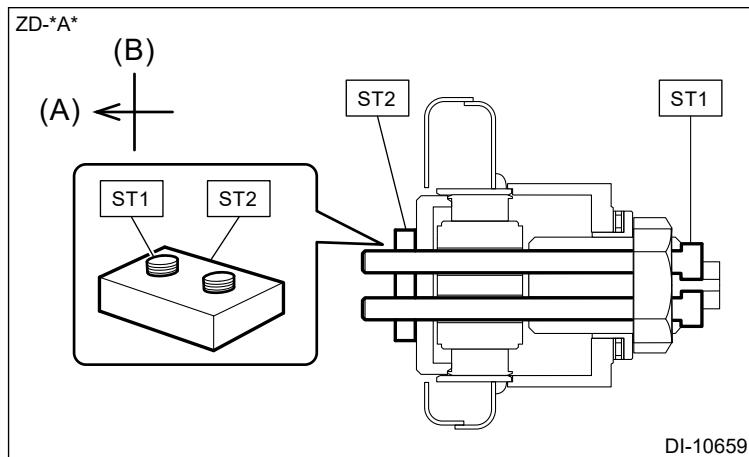


5. Insert the ST set in the step 3. through the rear differential mount bushing LH from the rear side, and tighten the ST1 until the front end of ST1 comes out from the rear end of ST2 by about 15.0 mm (0.59 in).

**Preparation tool:**

ST1: SPECIAL TOOL BOLT (41399CA140)

ST2: SPECIAL TOOL PLATE (41399CA110)



(A) Front side

(B) Upside

6. Hold the ST1 to prevent it from rotating, and tighten the ST3 by hand till there is no loose fit on the ST2.

**Caution:**

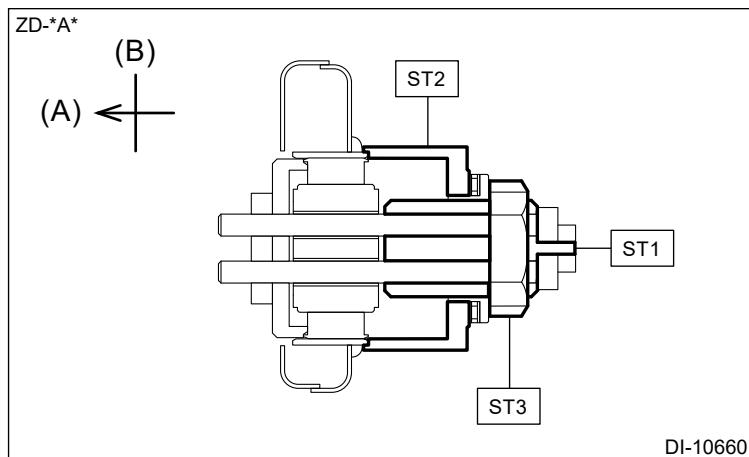
- Check that the ST2 contacts the cylinder circumference of the sub frame.
- Check that the ST is not tilted.

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399CA150)

ST2: SPECIAL TOOL B (41399CA070)

ST3: SPECIAL TOOL NUT (41399CA120)



(A) Front side

(B) Upside

7. Hold the ST1 with a tool to prevent it from rotating, and screw in the ST2 to remove the rear differential mount bushing LH.

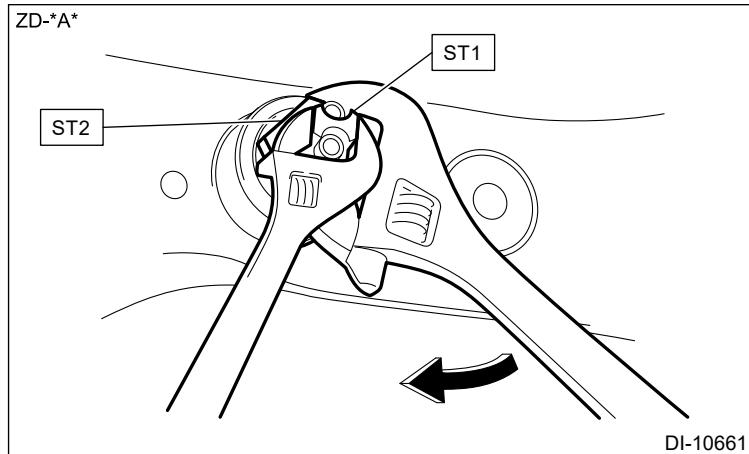
**Caution:**

- Rotation of ST1 will damage the ST. Never rotate the ST1.
- If the ST starts to tilt, stop the work and set the ST again.

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399CA150)

ST2: SPECIAL TOOL NUT (41399CA120)



- 8.** Set the ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8 and a new rear differential mount bushing LH as shown in the figure.

**Caution:**

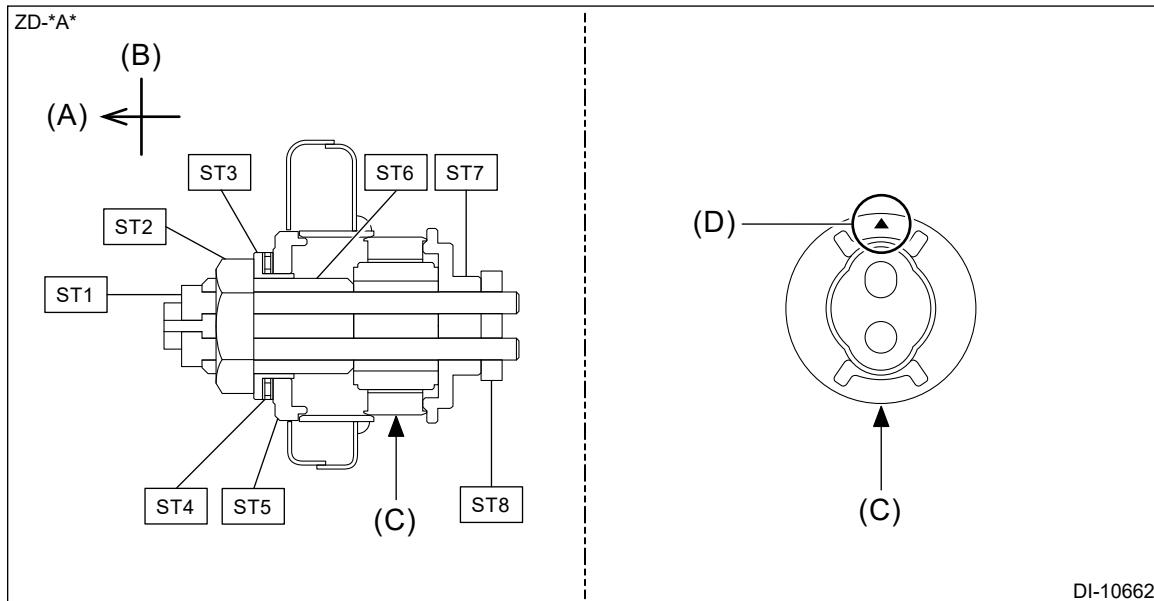
**Apply the molybdenum grease on the thread of the ST.**

**Note:**

- Set the ST2 near to the end of ST1 screw.
- Set the rear differential mount bushing LH facing upward with the triangle marked side facing toward the rear side.
- Mark the bottom end of rear differential mount bushing LH to identify the installing direction.

**Preparation tool:**

- ST1: SPECIAL TOOL BOLT (41399CA140)
- ST2: SPECIAL TOOL NUT (41399CA120)
- ST3: SPECIAL TOOL SLEEVE (41399CA100)
- ST4: SPECIAL TOOL BEARING (41399CA130)
- ST5: SPECIAL TOOL C (41399CA080)
- ST6: SPECIAL TOOL SHAFT (41399CA150)
- ST7: SPECIAL TOOL D (41399CA090)
- ST8: SPECIAL TOOL PLATE (41399CA110)



(A) Front side

(C) Marking

(D) Triangle mark

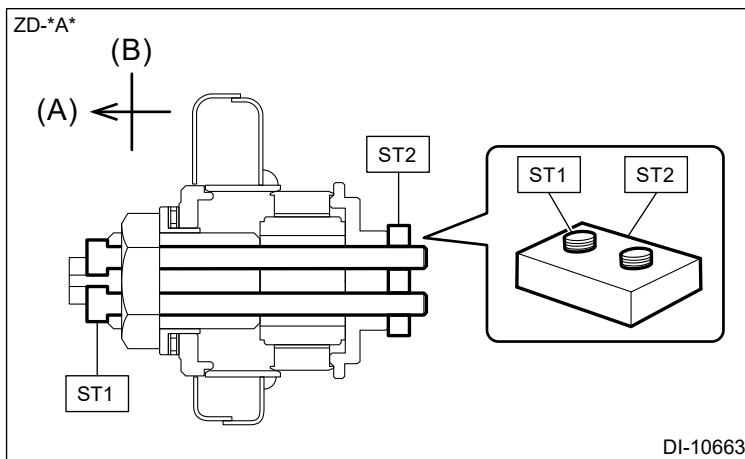
(B) Upside

9. Tighten the ST1 until the front end of ST1 comes out from the rear end of ST2 by about 8.0 mm (0.31 in).

**Caution:****Set the rear differential mount bushing LH with its mark facing the bottom end direction.****Preparation tool:**

ST1: SPECIAL TOOL BOLT (41399CA140)

ST2: SPECIAL TOOL PLATE (41399CA110)



(A) Front side

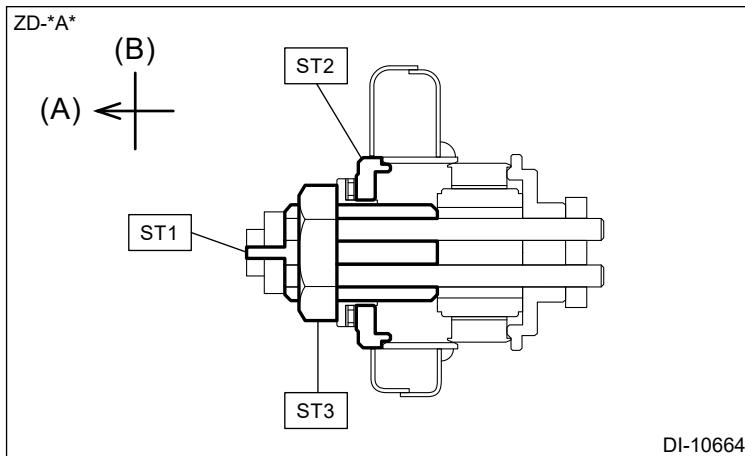
(B) Upside

10. Hold the ST1 to prevent it from rotating, and tighten the ST3 by hand until there is no loose fit on the ST2 and the rear differential mount bushing LH.

**Caution:****Make sure that the ST and rear differential mount bushing LH are not tilted.****Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399CA150)

ST2: SPECIAL TOOL C (41399CA080)  
ST3: SPECIAL TOOL NUT (41399CA120)



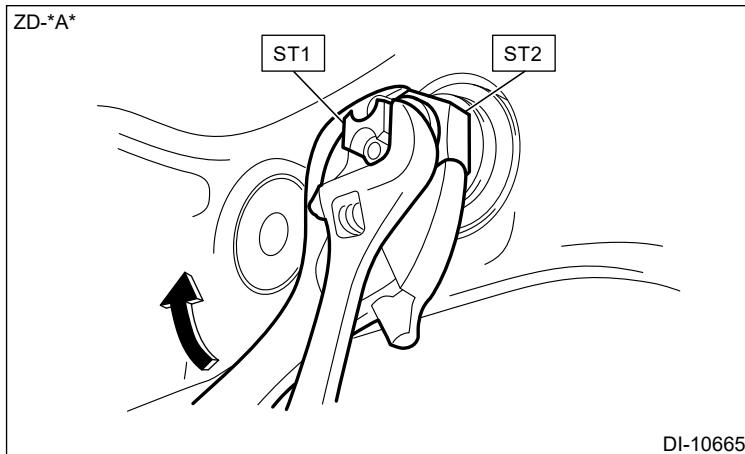
- 11.** Tighten the ST2 while holding the ST1 with a tool to prevent it from rotating, and press-fit the rear differential mount bushing LH to the rear end of the sub frame assembly rear cylinder.

**Caution:**

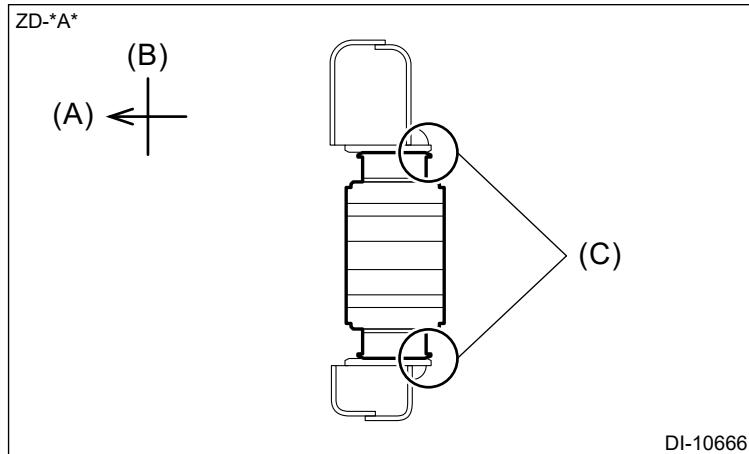
- **Rotation of ST1 will damage the ST. Never rotate the ST1.**
- **If the ST starts to tilt, stop the work and set the ST again.**

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399CA150)  
ST2: SPECIAL TOOL NUT (41399CA120)



- 12.** Make sure that the rear differential mount bushing LH is press-fit to the rear end of the sub frame assembly rear cylinder.



(A) Front side

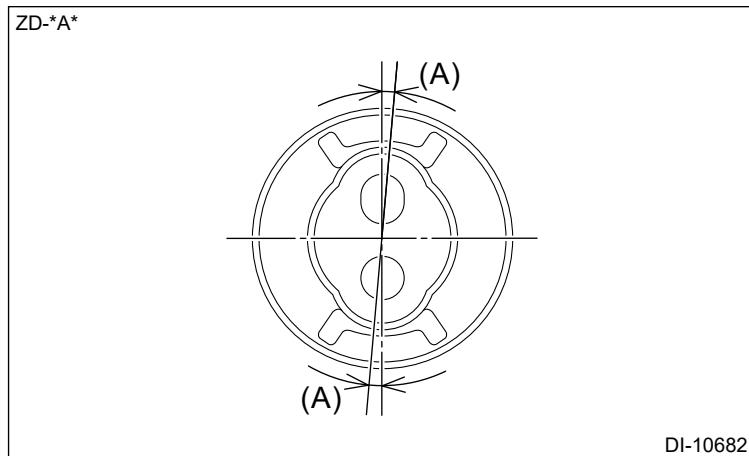
(B) Upside

(C) Rear end of the sub frame  
ASSY rear cylinder

**13.** Check the installation angle of the rear differential mount bushing LH as shown in the figure.

**Note:**

**Check that deviation in the rotating direction is within the range shown in the figure.**



(A) 3°

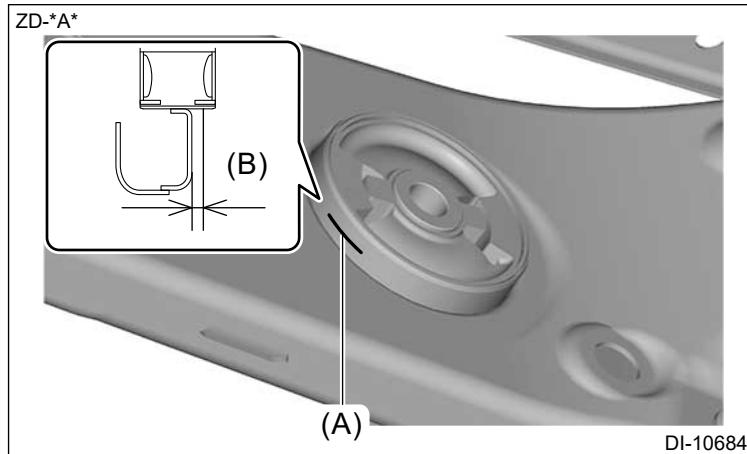
**14.** Install the rear differential. Ref. to DIFFERENTIALS>Rear Differential>INSTALLATION.

## 2. REAR DIFFERENTIAL MOUNT BUSHING RH

**Caution:**

**Be sure to remove dirt and rust before work.**

1. Remove the rear differential. Ref. to DIFFERENTIALS>Rear Differential>REMOVAL.
2. Mark the position about 7.0 mm (0.28 in) away from the sub frame assembly rear on the side of the rear differential mount bushing RH.



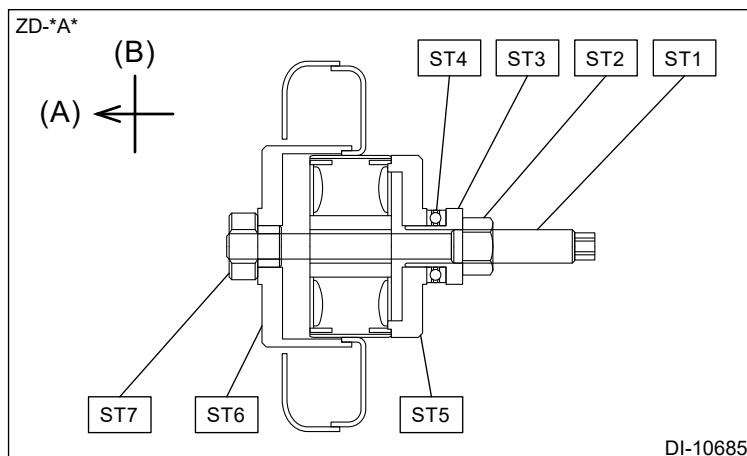
3. Set the ST1, ST2, ST3, ST4, ST5, ST6 and ST7 as shown in the figure.

**Caution:**

**Apply the molybdenum grease on the thread of the ST.**

**Preparation tool:**

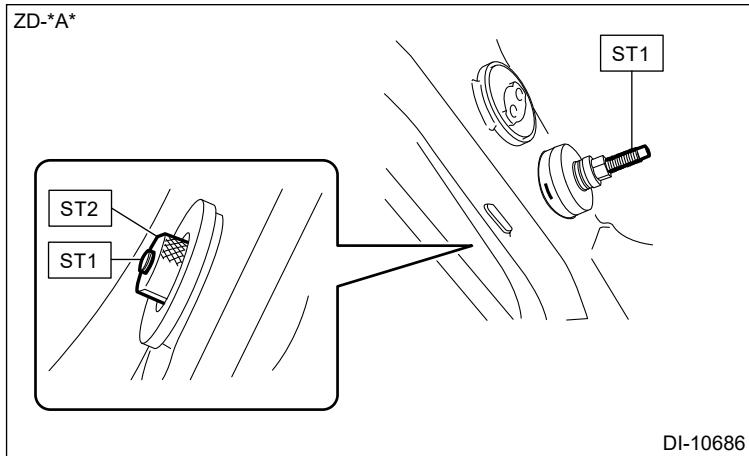
ST1: SPECIAL TOOL SHAFT (41399FG091)  
 ST2: SPECIAL TOOL NUT (41399FG070)  
 ST3: SPECIAL TOOL SLEEVE (41399FG050)  
 ST4: SPECIAL TOOL BEARING (41399FG080)  
 ST5: SPECIAL TOOL A (41399CA010)  
 ST6: SPECIAL TOOL C (41399CA030)  
 ST7: SPECIAL TOOL RING (41399FG061)



4. Tighten the ST2 by hand until the front end of ST1 comes out from the rear end of ST2 by about 1.5 mm (0.06 in).

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)  
 ST2: SPECIAL TOOL RING (41399FG061)



- Hold the ST1 to prevent it from rotating, and tighten the ST2 by hand until there is no loose fit on the ST and the rear differential mount bushing RH.

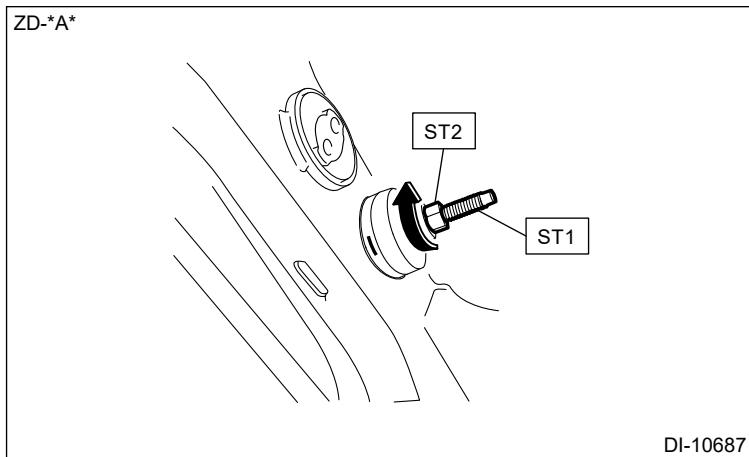
**Caution:**

**Check that the ST is not tilted.**

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL NUT (41399FG070)



- Tighten the ST2 while holding the ST1 with a tool to prevent it from rotating, and press-fit the rear differential mount bushing RH to the marked position.

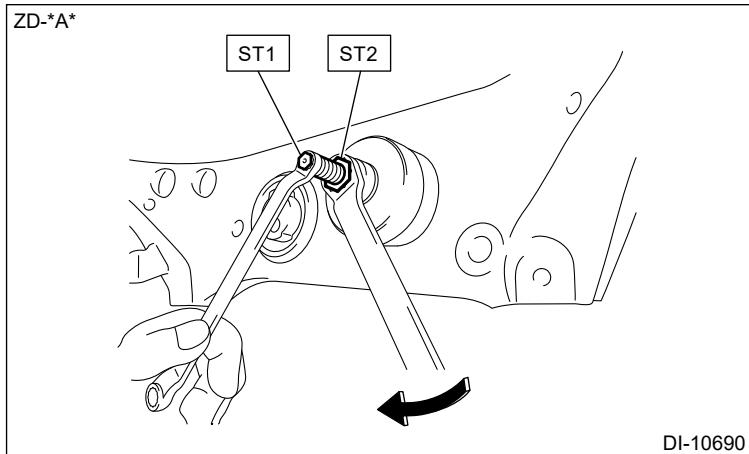
**Caution:**

- Rotation of ST1 will damage the ST. Never rotate the ST1.**
- If the ST starts to tilt, stop the work and set the ST again.**

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL NUT (41399FG070)



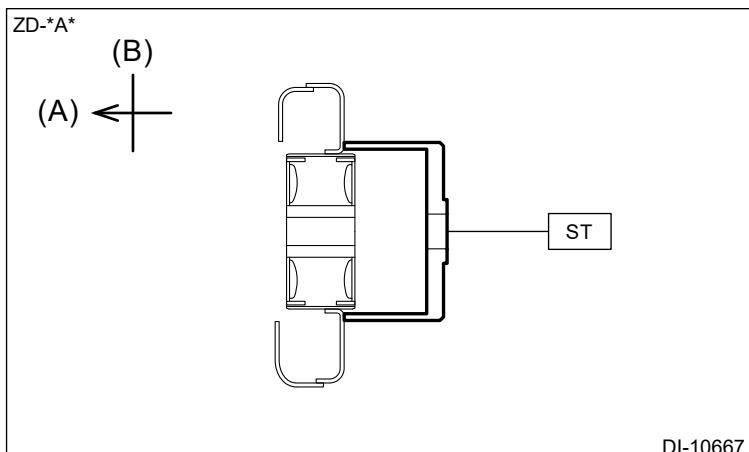
- Fit the ST to the periphery of the sub frame assembly rear, and make sure that the ST comes in contact with the sub frame assembly rear.

**Caution:**

**If the ST is fitted at an angle, it may become damaged. Fit the ST perpendicular to the back surface of the sub frame assembly rear.**

**Preparation tool:**

ST: SPECIAL TOOL B (41399CA020)



(A) Front side

(B) Upside

- Set the ST1, ST2, ST3, ST4 and ST5 as shown in the figure.

**Caution:**

**Apply the molybdenum grease on the thread of the ST.**

**Preparation tool:**

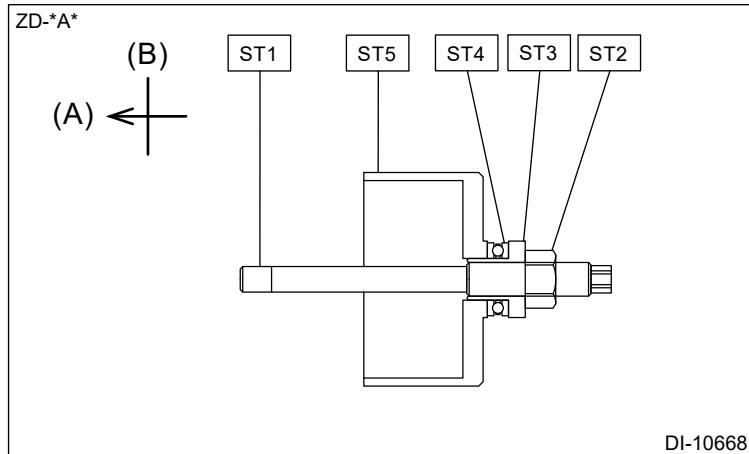
ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL NUT (41399FG070)

ST3: SPECIAL TOOL SLEEVE (41399FG050)

ST4: SPECIAL TOOL BEARING (41399FG080)

ST5: SPECIAL TOOL B (41399CA020)



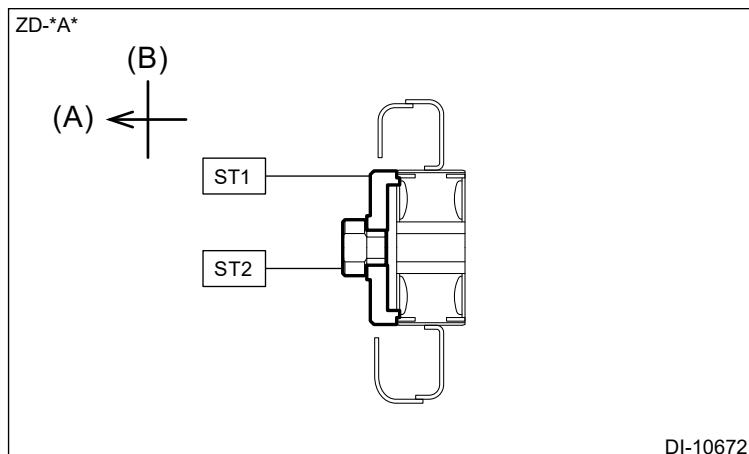
(A) Front side      (B) Upside

- 9.** Set the ST1 and ST2 in the rear side of the rear differential mount bushing RH, and hold them.

**Preparation tool:**

ST1: SPECIAL TOOL C (41399CA010)

ST2: SPECIAL TOOL RING (41399FG061)



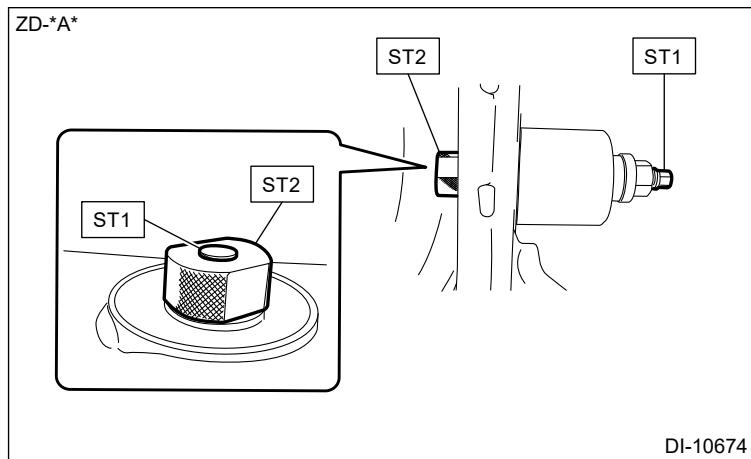
(A) Front side      (B) Upside

- 10.** Insert the ST set in the step 8. through the rear differential mount bushing RH from the rear side, and tighten the ST2 by hand until the front end of ST1 comes out from the rear end of ST2 by about 1.5 mm (0.06 in).

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL RING (41399FG061)



- 11.** Hold the ST1 to prevent it from rotating, and tighten the ST3 by hand till there is no loose fit on the ST2.

**Caution:**

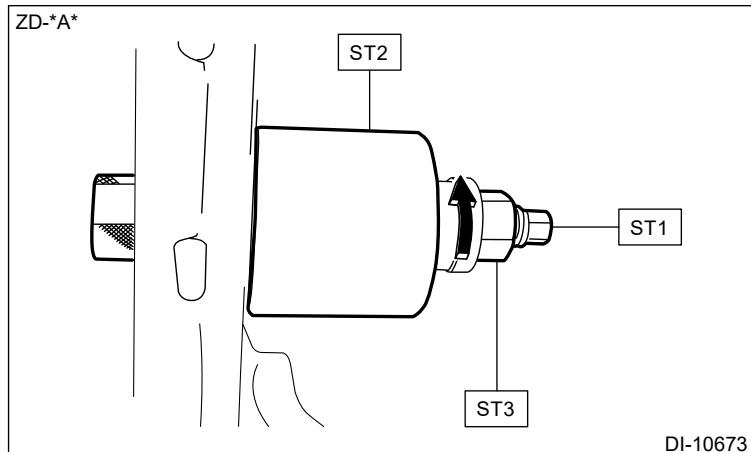
- Check that the ST2 contacts the sub frame assembly rear.
- Check that the ST is not tilted.

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL B (41399CA020)

ST3: SPECIAL TOOL NUT (41399FG070)



- 12.** Hold the ST1 with a tool to prevent it from rotating, and tighten the ST2 to remove the rear differential mount bushing RH.

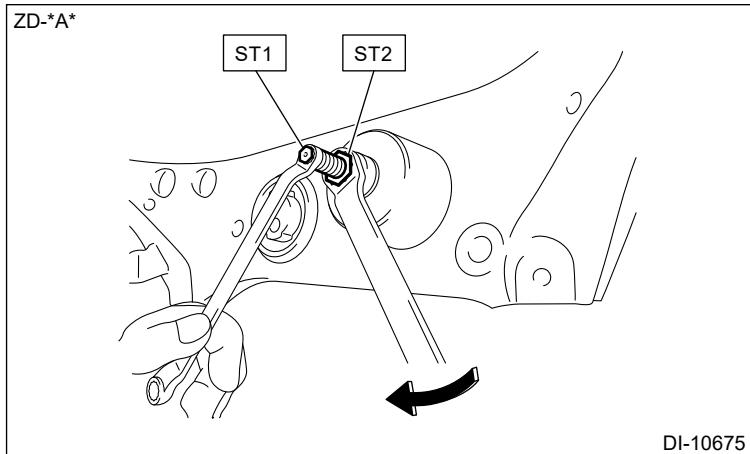
**Caution:**

- Rotation of ST1 will damage the ST. Never rotate the ST1.
- If the ST starts to tilt, stop the work and set the ST again.

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL NUT (41399FG070)



- 13.** Set the ST1, ST2, ST3, ST4, ST5, ST6, ST7 and a new rear differential mount bushing RH as shown in the figure.

**Caution:**

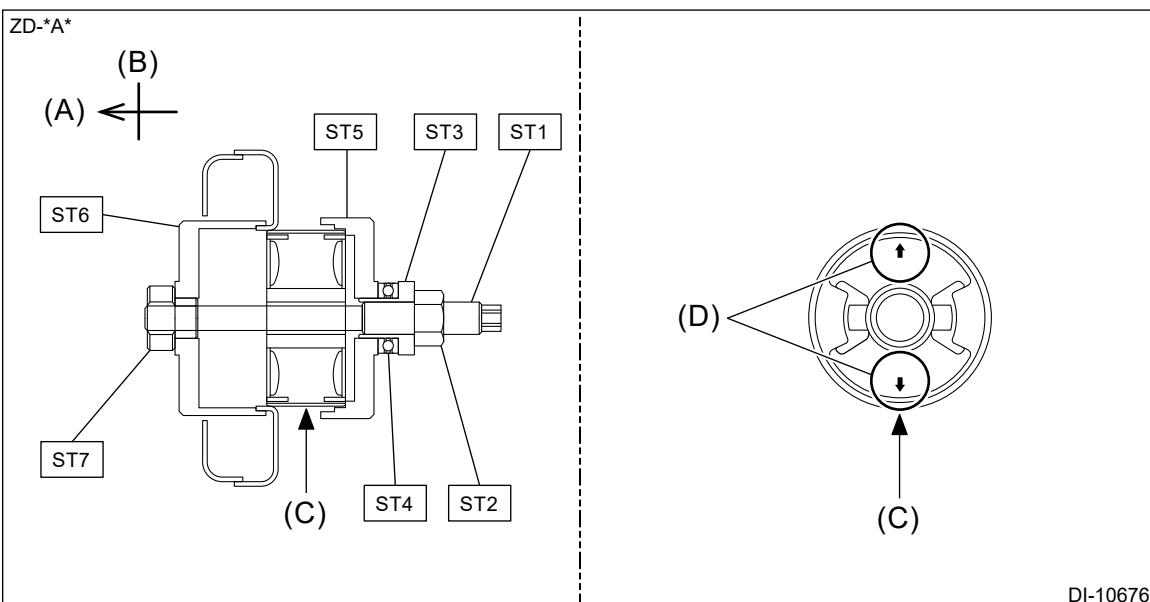
**Apply the molybdenum grease on the thread of the ST.**

**Note:**

- Set the ST2 nut near to the end of ST1 screw.
- Hold the rear differential mount bushing RH with the arrow marked side facing toward the rear side, and set the arrow mark facing upward and downward.
- Mark the bottom end of rear differential mount bushing RH to identify the installing direction.

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)  
 ST2: SPECIAL TOOL NUT (41399FG070)  
 ST3: SPECIAL TOOL SLEEVE (41399FG050)  
 ST4: SPECIAL TOOL BEARING (41399FG080)  
 ST5: SPECIAL TOOL D (41399CA040)  
 ST6: SPECIAL TOOL C (41399CA030)  
 ST7: SPECIAL TOOL RING (41399FG061)



- (A) Front side  
 (B) Upside

(C) Marking

(D) Arrow mark

- 14.** Tighten the ST2 by hand until the front end of ST1 comes out from the rear end of ST2 by about 1.5 mm (0.06 in).

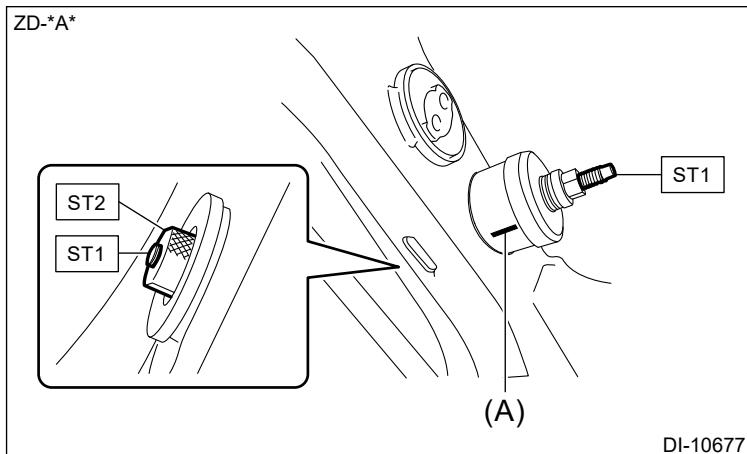
**Caution:**

**Set the rear differential mount bushing RH with its mark facing the bottom end direction.**

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL RING (41399FG061)



(A) Marking

- 15.** Hold the ST1 to prevent it from rotating, and tighten the ST2 by hand until there is no loose fit on the ST and the rear differential mount bushing RH.

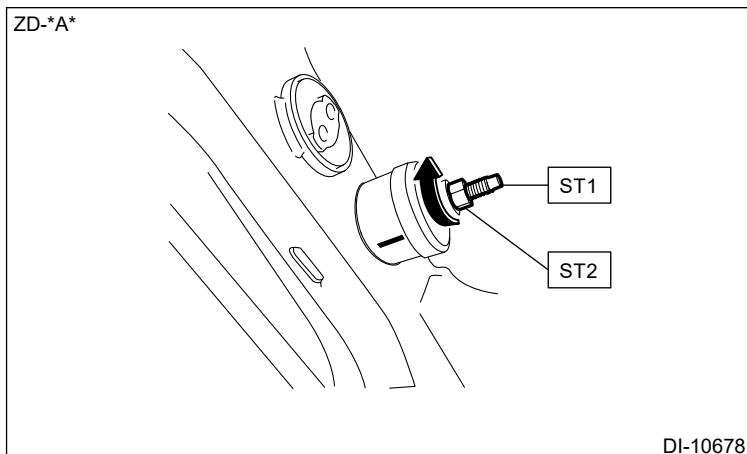
**Caution:**

**Make sure that the ST and rear differential mount bushing RH are not tilted.**

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL NUT (41399FG070)



- 16.** Hold the ST1 with a tool to prevent it from rotating, and screw in the ST2, and then press-fit the rear differential mount bushing RH until ST3 comes in contact with the sub frame assembly rear.

**Caution:**

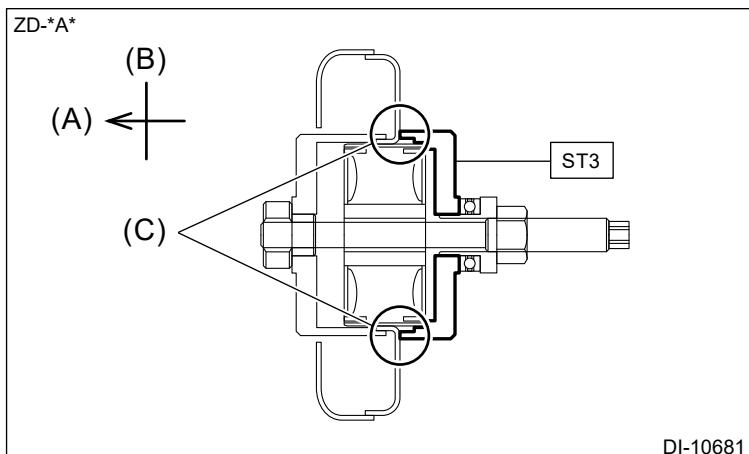
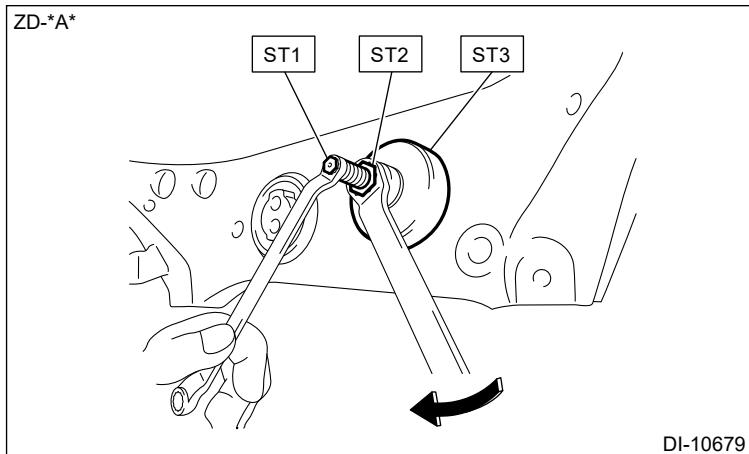
- Rotation of ST1 will damage the ST. Never rotate the ST1.
- If the ST starts to tilt, stop the work and set the ST again.

**Preparation tool:**

ST1: SPECIAL TOOL SHAFT (41399FG091)

ST2: SPECIAL TOOL NUT (41399FG070)

ST3: SPECIAL TOOL D (41399CA040)



(A) Front side

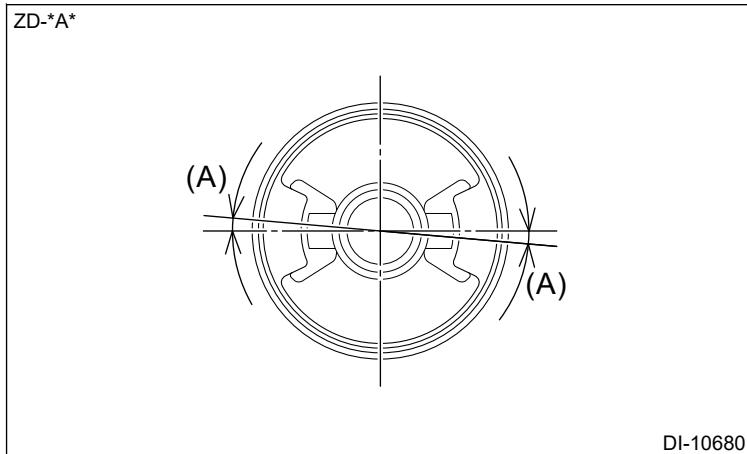
(B) Upside

(D) Set against the sub frame  
ASSY rear.

**17.** Check the installation angle of the rear differential mount bushing RH as shown in the figure.

**Note:**

**Check that deviation in the rotating direction is within the range shown in the figure.**



(A) 5°

**18.** Install the rear differential.  Ref. to DIFFERENTIALS>Rear Differential>INSTALLATION.

## DIFFERENTIALS > Rear Differential Mount Bushing

### INSPECTION

- 1.** Check that there is no deformation, cracks or other damages.
- 2.** Check the bushing for crack or excessive hardening.

## DIFFERENTIALS &gt; Symptoms and causes

## INSPECTION

**Caution:**

**If noise occurs, identify the cause before work.**

Symptoms	Problem parts etc.	Possible cause
Noise when shifting from "P range" or "N range" or starting  <b>Note:</b> <b>If the maximum vehicle speed recorded in the control operation history exceeds 216 km/h (134 MPH) (AT model) or 226 km/h (140 MPH) (MT model), the vehicle may have been operated at an abnormally high speed. Check if the vehicle has been modified.  <a href="#">Ref. to ENGINE (DIAGNOSTICS)</a> (<a href="#">H4DO</a>)&gt;<a href="#">Work Support</a>&gt;<a href="#">OPERATION</a>.</b>	Final gear set	Excessive final gear set backlash
	Drive pinion or companion flange	Wear or damage at splines of drive pinion or companion flange
	Drive pinion nut securing the companion flange	Loose drive pinion nut
	Drive pinion tapered roller bearing FR or drive pinion tapered roller bearing RR	Insufficient preload for the drive pinion tapered roller bearing FR or drive pinion tapered roller bearing RR
	Side gear shaft washer	Excessive backlash between the differential side gear and differential pinion
	Drive pinion gear or drive pinion shaft	Wear or damage at connection of drive pinion gear and drive pinion shaft
	Rear differential mount bushing	Excessive hardening or damage of the rear differential mount bushing
Noise when turning  <b>Note:</b> <b>If the maximum vehicle speed recorded in the control operation history exceeds 216 km/h (134 MPH) (AT model) or 226 km/h (140 MPH) (MT model), the vehicle may have been operated at an abnormally high speed. Check if the vehicle has been modified.  <a href="#">Ref. to ENGINE (DIAGNOSTICS)</a> (<a href="#">H4DO</a>)&gt;<a href="#">Work Support</a>&gt;<a href="#">OPERATION</a>.</b>	Differential side gear, differential pinion	Damaged gear
	Drive pinion shaft	Excessive wear or damage of the drive pinion shaft
	Side gear shaft washer	Excessive wear or damage of the side gear shaft washer
Noise when driving (under constant load)	Each bearing	Wear, damage or seizure of each bearing

Symptoms	Problem parts etc.	Possible cause
<p><b>Note:</b>  <b>If the maximum vehicle speed recorded in the control operation history exceeds 216 km/h (134 MPH) (AT model) or 226 km/h (140 MPH) (MT model), the vehicle may have been operated at an abnormally high speed.</b>  <b>Check if the vehicle has been modified.</b>  <a href="#">Ref. to</a></p>		
	Each gear	Damage of each gear
<p><b>ENGINE (DIAGNOSTICS)</b>  <u>Oil leakage from differential case</u>  <a href="#">Support&gt;OPERATION.</a></p>	Each oil seal	Wear or damage of each oil seal
	Differential gear oil	Excessive differential gear oil level